NATURAL RESOURCES OF NOVA SCOTIA

Department of the Interior
Canada

Hon. Arthur Meighen
Minister

W. W. Cory, C.M.G.
Deputy Minister

Natural Resources Intelligence Branch
F. C. C. Lynch, Superintendent

The Resources of Nova Scotia

Compiled for the use of Settlers and Investors
from Material supplied mainly by
Federal and Provincial
Services

1920

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"After 3 years' study of Canada I am prepared to hold the field against the world on this proposition—that great as are the resources, advantages and attractions of the sister provinces, Nova Scotia need not be afraid to pit her charms against those of the sister provinces, however fair they may be . . If the people of Nova Scotia do not reach greatness, they have only themselves to blame."—(*Earl Grey, 1907*).

"I could wish that the great advantages offered by your Maritime Provinces were better known in the United Kingdom."—(*Earl Grey, 1907, Aug. 15*).

FOREWORD.

The facts in this booklet are compiled for the use of the home-seeker, merchant, manufacturer, capitalist, and visitor. They purpose to be up-to-date, authoritative, concise.

The Dominion Government fathers all nine Provinces alike and all nationalities therein that owe allegiance to the Crown. Its interests are those of that member of the Imperial Body named Canada, and herein are set down the special claims to consideration of that member of the Dominion named Nova Scotia.

When a man with the world before him is choosing a place to visit, or in which to work, to invest, or settle, there are definite facts that he will wish to know. In this booklet we state such facts, each of which will interest one reader if not another. His final choice may result from a cool balancing of the answers to a series of questions running in his mind, but his peculiar temperament or past experience may magnify the importance of some facts or cause him to look through the wrong end of the field glasses at others. Thus a man in search of sunshine may make for a country where for nine months of the year all is dust, which he will be glad to change before long for a land of mildew: the sight of a nugget may take a man to the Yukon, but a chance illustration of apple-picking may move him back to Nova Scotia.

When a reader's interest is aroused, his plan of action may be simplified by getting into touch with the

NATURAL RESOURCES INTELLIGENCE BRANCH,
DEPARTMENT OF THE INTERIOR,
OTTAWA.

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The Natural Resources Intelligence Branch acknowledgeswith thanks the assistance given by the Departments and Branches both of the Dominion and Provincial Governments, whose publications have been freely used and which have severally examined and corrected such sections of this compilation as fall within their sphere.

THE RESOURCES OF NOVA SCOTIA.

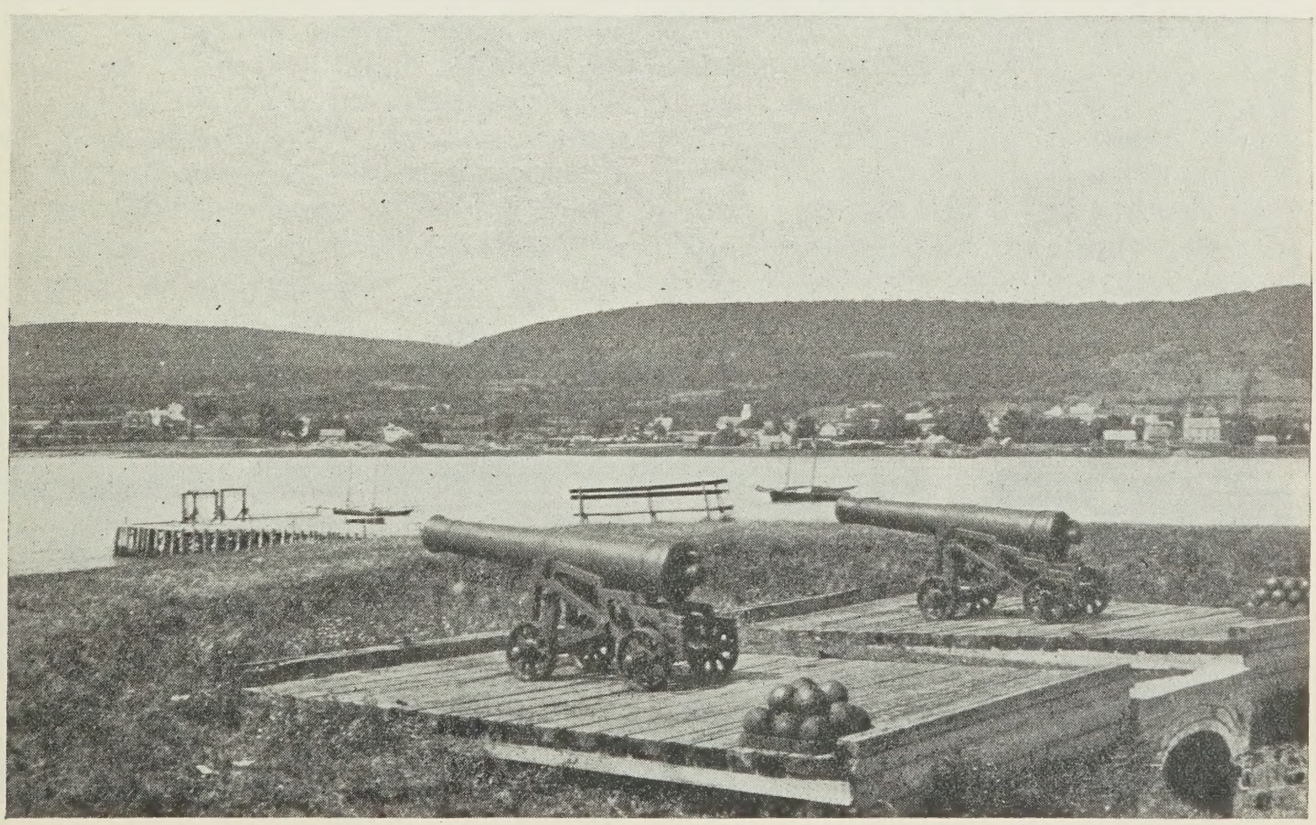
Historical Notes.

It is now 422 years since the little ship "*Matthew*," "sometime stayed" on her course by schools of cod, carried John Cabot to hoist the Royal Standard on Cape Breton Island.

The attempted settlement of Nova Scotia itself was the only Scottish colonial enterprise undertaken by a purely Scottish King, for the canny James VI, before leaving Edinburgh to be crowned as James I of England, was already turning the claims of Henry VII into cash and selling "Baronetcies of Nova Scotia" to such as would buy real estate in "Acadia" from his factor, Sir W. Alexander. Few British settlers, however, came, and for the next century the land was French. It was not till the foundation of Halifax in 1749, after the Peace of Aix-la-Chapelle had restored Louisburg to the French, that the British stock took firm root.

The final surrender of Louisburg to Admiral Boscawen ("Old Dreadnought") and Wolfe marked the end of the French regime. Louisburg—the mighty fortress forming the first link of the chain that France in the 18th century was stretching to hem in the English from the Atlantic to the Gulf of Mexico—is now the winter port of the Dominion Coal Company. Halifax, planted as her rival, remains the gateway to Canada and a base of the Imperial Navy in the North Atlantic.

On the east coast of Cape Breton Island the seams of coal, described by early voyagers as threading the cliffs and worked with crow bars for French and English cargoes, were the outcrop of what has proved to be the great and only



ANNAPOLIS ROYAL.

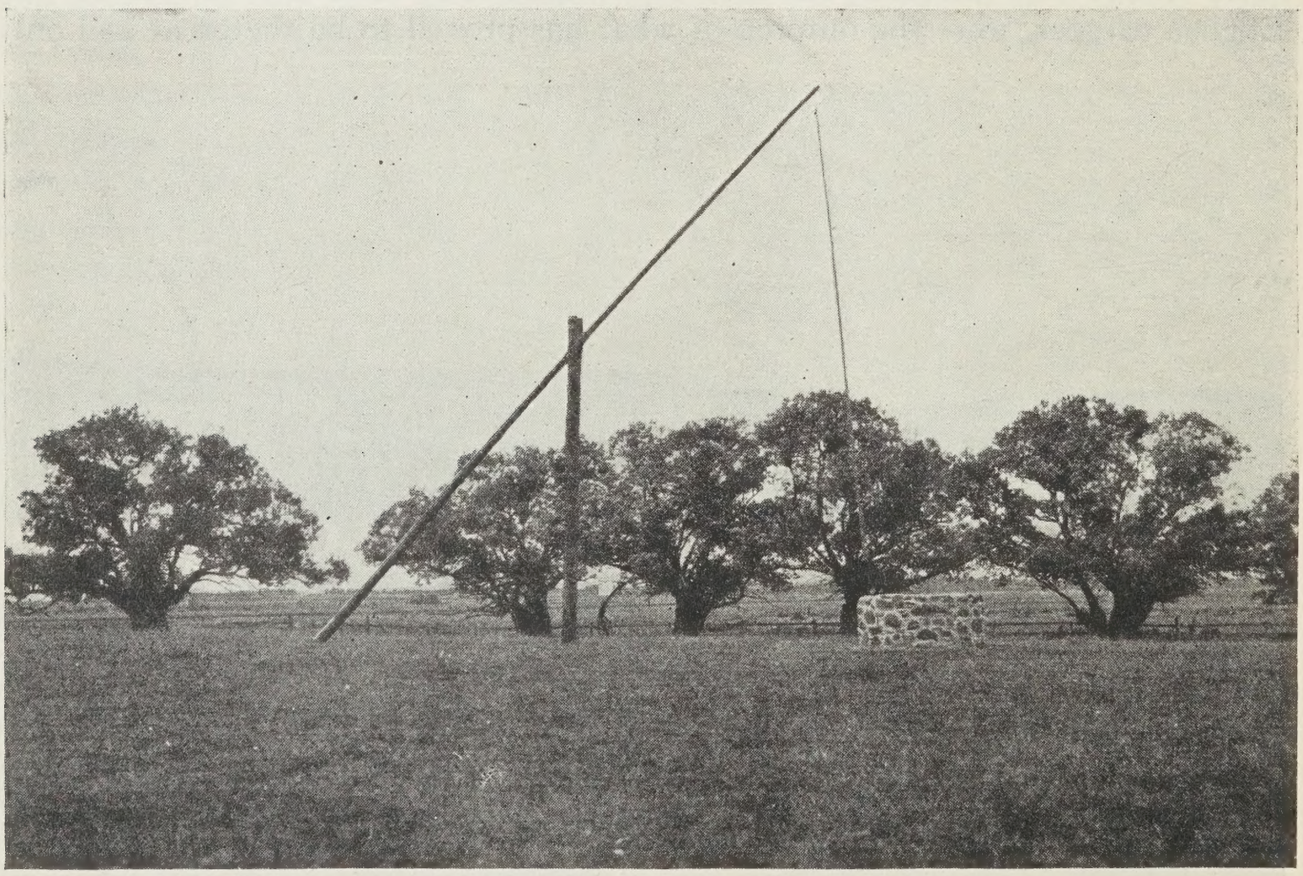
coal field on the Atlantic seaboard of North and South America. At the opposite end of the province lies "Acadia," a name identified by romance with the "Grand Pré,"—once the only space left clear by nature in the forest that spread unbroken from Cape Breton to the undiscovered prairies. Here is Annapolis Royal, the capital of Nova Scotia till 1750 and the oldest European settlement north of Florida. For a century from its foundation as Port Royal after the visit of Champlain in 1604 it had a record of attack, capture and recapture, until finally taken by New Englanders and renamed for Queen Anne in 1710.

Picture, then, Nova Scotia, including Cape Breton island, as one long peninsula, 374 miles long by 60-100 miles wide, enriched with black diamonds on the east, and with gold-medal apples on the west; a peninsula fringed by waters teeming with fish, with a southerly coast of land-locked harbours inviting trade with the West Indies, Latin America, Africa and Europe; and, passing through the twelve-mile-wide isthmus of Chignecto, transcontinental trains carrying travellers, freight and mails to and fro for 3,000 miles between Halifax and Pacific ports.

The mail question is near to the heart of a Nova Scotian, for was it not Samuel Cunard, Halifax merchant, trader between Newfoundland, Boston and Bermuda, who first evolved the plan of an Atlantic steam-mail service, and who with Burns and McIver formed the Cunard Company and sent the *Britannia* paddling across in 1840? With delivery of mail by airplane rather than by railway a probability of the near future, Nova Scotia with a balance of 558 miles in its favour over New York, will be the logical landing-place for the bags.

The Population.

In March, 1919, there were roughly 519,000 inhabitants of Nova Scotia showing an increase of about 7 per cent. since the last census (1911). Of these about 80 per cent. are of British descent and 10 per cent French.



EVANGELINE'S WELL.

Displacing the Micmac Indians, a few hundreds of whom survive, and whose contribution to the province has been mainly that of weird or beautiful names, the French were the first to get a footing, mainly in Acadia. Here the salt marshes, needing no clearing, were especially attractive to the French from the mouth of the Loire, whose fathers had reclaimed and dyked such lands for generations. Nearly all other French-Canadians were from Normandy or Brittany and became of necessity sons of the forest or voyageurs. In Acadia and Cape Breton there were no large seigneuries or vassalage but just communities of peasants or fishermen guided by the priests, and allied or even inter-marrying with Micmacs. In the middle of the 17th century Louis XIV granted Cape Breton Island to one Nicholas Denys, who has left us an account of the early fishing stations, their methods of curing fish and the outcropping of coal. When, later, Louisburg was fortified to guard the mouth of the St. Lawrence and protect the fishing fleet, the French population of Cape Breton grew.

The first body of British to settle in Nova Scotia were the 2,500 disbanded soldiers who on June 21, 1749, sailed in to clear the forest round Chebucto bay for the site of Halifax, to which city the capital was moved from Annapolis. Soon after came 2,000 Hanoverians, who founded Lunenburg and were reinforced by others at the close of the Seven Years' War in 1763. A little later 200 Highlanders were brought to Pictou Harbour—the first wave of the 25,000 who before 1828 settled in Cape Breton Island and in Pictou and Colchester counties; for after 1745 the Highland clansmen were the unemployed, and sought fresh fields for action. Across the sea the dormant industrial quality awoke and, stiffened by the fighting instinct, put many of their descendants in the front rank of commercial and political enterprise.

At the close of the American Revolutionary War Nova Scotia welcomed the third great influx of population in 28,000 of the United Empire Loyalists, 3,000 of whom founded Sydney, while another 10,000 settled at Shelburne and other places, mainly in Digby county, the rest moving westward to New Brunswick and Quebec.

The number of British settlers was increased about a hundred years ago by grants of land of 100 to 10,000 acres to the disbanded soldiers and sailors of the King. Today the grandsons of these grantees fill many of the most important positions in the Dominion. This Anglo-Celtic stock supplied in 1758 the twenty-two members of the first representative government in the Empire overseas, and the Council of Twelve that ruled Nova Scotia until overthrown by Joseph Howe in the interests of a wider democracy. Joseph Howe, orator and statesman, is an outstanding figure in Nova Scotian history. It was said by Lord Grey that the British Empire owed her stability to his foresight, and that the book containing his speeches and writings ought to be found on a shelf in every portion of the British Empire. Nova Scotia also claims among her sons Sir Charles Tupper, one of the "Fathers of Confederation" and three out of the seven Prime Ministers of Canada, including Sir Robert Borden who was the first Canadian Minister to sit in the Imperial Cabinet and was the Dominion representative at the Peace Conference of 1919.

Immigration.

It is noticeable how few of the present population are classified in the census as "foreign born." Of these in 1917 there were only 10,972, and of these again nearly one-half were kindred immigrants from the United States of America. The waves of immigration to Canada, gathering force since the battle of Waterloo, swept westward, and were joined by Nova Scotians heading for the newly-formed provinces: but Nova Scotians now, more than ever, are realizing how good the chances are in their native or adopted land. For the last five years

immigration to the Maritime Provinces has nearly stopped, falling from 19,806 in 1913 to 3,860 in 1919, but the flow is again gathering volume. Nova Scotia has so far received the bulk of the immigrants to the Maritime Provinces.

The intending settler will see by the following regulations that the Dominion is careful to safeguard the quality of its inhabitants and keep at a distance all undesirable units:—

(i) Any person who within three years of landing has been convicted of a criminal offence in Canada or has become a public charge may be deported with all dependent members of his family at the cost of the steamship and railway company that brought him to Canada.

(ii) An adult white emigrant must have in his or her possession a ticket to destination and $50 in cash. The possession of $25 only, however, is required from those arriving between the end of February and November 1st.

Farm labourers and female domestics going to assured employment may be admitted regardless of the money they possess, as may also certain blood-relations coming to relatives already settled.

(iii) Entry is forbidden to those not of sound mind, to criminals, to those likely to become a public charge and to those suffering from any disease likely to prove injurious to the public health.

An Order in Council dated January 9, 1919, prohibits the landing of immigrants who are alien enemies or who have been alien enemies during the war, but provides that "this regulation shall not be held to include those races or nationalities, technically and formerly subjects of Germany, Austria-Hungary, Bulgaria or Turkey, who have declared their independence or whose dependence is recognized by the Peace Conference or whose government is placed under the control of a Mandatory Power."

Nova Scotia is the nearest part of the Empire in constant and direct communication with the British Isles. The distance to Liverpool or Glasgow is 2,400 miles, or less than half of that from Plymouth to Cape Town, South Africa (5,295), and about one-fifth of the voyage to Australia or New Zealand whether by the Panama or Suez canal. Fares are proportionately less, ranging now from $61.25 or £15 (third class) to $170 or more (first class). Settlers' effects are admitted free of duty.

Of the 90,000 who entered Canada by the Halifax gateway in the last normal year, 1913, 5,106 (18 per cent.) remained in Nova Scotia. Of these, 2,520 were British and included 1,032 females. Of the remaining 2,586 foreigners only 412 were females, 857 husbands having left their wives behind them.

Few of the foreign immigrants go on the land, but are attracted rather by the higher cash wages of mining and other industries. The class of immigrant most sought after by the Provincial Government is the farmer with some capital or the farm labourer who will in time become a full-fledged settler. In 1914 farms were bought or rented by 54 immigrants with capital amounting to $300,000, and nearly 300 entered as farm labourers. To many of these immigrants the Provincial Government advanced money for the purchase of farms. Settlers, after passing through the hands of the Dominion Immigration officer on arrival are met by a representative of the Nova Scotia Department of Industries and Immigration, who directs to destination and gives information where to obtain employment. Lists of farmers needing help are available and also a list of farms for sale. The services of an expert valuer are offered free of charge to prospective settlers.

The Women's Welcome Hostel, which is officially connected with the Department of Immigration, attends to the reception of women on arrival at Halifax. They are met by the secretary and receive free lodging at the Hostel for twenty-four hours. Positions in families are readily found, and for new arrivals,

at least during the first few months, the Hostel serves the purpose of a women's social club. Catholic girls are taken care of by the Sister in charge of the St. Teresa Home. Much friendly work for the stranger is also done by the Salvation Army Immigration Department.

Training farms for boys are maintained at Falmouth, in Hants county, for boys sent out from Nottingham, England, and at Merigomish for young men who have had preliminary training at the farm of the Hon. Rupert Guinness at Woking, Surrey, England. Children are the special care of the Middlemore Home.

Indians.

The Nova Scotia Indians are Micmacs of the Algonquin stock. Most of them are farmers in a small way, raising hay, potatoes and vegetables, horses and cattle, but no sheep and few pigs. Many work as day labourers, others engage in basket work and the smaller wood industries; others find employment in lumbering, hunting and trapping and as guides for sportsmen.

The nineteen agencies have an aggregate population of 2,031, of whom 2,006 are Roman Catholic. The acreage of reserves is 19,579, valued at $86,060; of this 2,125 are cultivated. The total value of the Indian real and personal property is $245,087, their income from all sources averaging less than $65 per head. The local cost to the Dominion Government for 1916-17 amounted to $28,314.

Government.

Nova Scotia became part of the Dominion of Canada under the British North America Act of 1867. Its government is vested in:—

(1) A Lieutenant Governor appointed by the Governor General in Council, i.e., on the advice of the Cabinet at Ottawa.

(2) A Legislative Council of twenty, named by the Executive and holding office for life.

(3) A Legislative Assembly elected by forty-one constituencies.

(4) An Executive Council of nine (1919) ministers with or without portfolios named by the Provincial Premier representing the majority in the Assembly.

The province is represented at Ottawa by ten senators and eighteen members of the House of Commons.

Nova Scotia receives an annual subsidy from the Dominion of nearly $320,000 made up of (1) an allowance of 80 cents per head of population, (2) an additional sum of $190,000 under an Act of 1907, (3) interest on the capital amount of the provincial debt at the time of admission into the Union.

Religion and Education.

The half-million inhabitants are divided according to their religious beliefs in these proportions:—

Roman Catholic (French and Scotch)	30	per cent.
Presbyterian	22	"
Baptist	17	"
Anglican	15	"
Methodist	12	"
Various	4	"

Under the British North America Act of 1867, which since Confederation has regulated the relations between the Dominion and Provincial Governments, freedom in religious matters is guaranteed to all.

Under the powers given in section 93 of the British North America Act, each province has passed regulations concerning religious or devotional exercises at the opening and closing of school. As a rule, except in the case of Roman Catholic Separate schools, denominational teaching is excluded, but there is generally provision for instruction in the principles of Christian morality. In every province the school law contains a "conscience clause" permitting the withdrawal of the pupil by the parent or guardian for the period of religious instruction. In Nova Scotia the question of devotional exercises is left to the local board of school trustees.

Within the last fifty years education in Nova Scotia has been revolutionized. In 1863 it is said that less than half of the children between 5 and 16 could read or write, but Sir Charles Tupper, in spite of fierce opposition, forced through the Assembly the Education Act which is the basis of the present system.

Education in Nova Scotia is compulsory for all children between 6 and 16 in cities and between 7 and 12 in country districts. The number of schools in Nova Scotia increased from 2,387 in 1901 to 2,837 in 1916, the pupils increasing in the same period from 98,410 to 109,189. Beginning with the eight grades of the "common school," education can be continued through the four high school grades or in county academies. University degrees are granted at:—

> Dalhousie University (Halifax, non-Sectarian); Acadia University (Wolfville, Baptist); King's College (Windsor, Anglican); St. Francis Xavier University (Antigonish, Roman Catholic).

The four universities have a collective enrolment of 758. They are independent of the Education Department and take their turn in the privileges of the Rhodes' Bequest under which a Scholarship of $1,500 a year for a three years' course at the University of Oxford is periodically assigned for competition.

The Agricultural College at Truro is maintained by the Government of Nova Scotia aided by a substantial Federal grant. Attached to the college is a farm of 400 acres with model pens of poultry, a herd of pure-bred Holsteins, Ayrshires and Shorthorns, and Clydesdale, standard-bred and hackney mares and stallions. Fertilizers, feed, fruit and vegetable growing are subjects of scientific experiment.

Besides the regular college course, short courses are given here and at other centres at times convenient for the busy farmer, women-student and teacher. In 1917, 150 students attended the School of Rural Science, and a great deal is being done to spread an interest in country life and useful tastes among the children. Visiting teachers, specialists in their lines, visit the country schools and teach such arts as those of preserving fruits and vegetables; thousands of children receive a free distribution of garden and grain seeds and of selected eggs for setting, the results being displayed at children's fairs. In this way the interest of the parents also is aroused, and a part of the child's spare time is occupied in a valuable way. Anything tending to narrow the gulf between the home garden and yard of the small proprietor as known in Canada and their counterpart in Europe is a forward step.

Technical Education.

The Federal budget of 1919 provides for the expenditure of $10,000,000 in ten years, beginning with $700,000 in the first year. This is to be allotted to the provinces according to population, but the allotment is not to exceed the amount paid by the province for the same purpose in each year.

The Central college at Halifax provides technical teaching in all engineering branches and there are twenty-two coal mining schools and ten schools of engineering in industrial towns. Provision is also made for instruction in art and designing.

An Act of 1917 established a Court for Juvenile Delinquents with a special superintendent for neglected or delinquent children, provided for the formation of Children's Aid Societies and regulated the employment of the young.

Votes for Women.

Under the Federal Act of May 24, 1918, it is enacted that every female person shall be entitled to vote at a Dominion election who—

(1) is a British Subject;

(2) is of the full age of 21 years;

(3) possesses the qualifications which would entitle a male person to vote at a Dominion election within the province.

The proportion of females to males in 1911 was 961 to 1,000.

Heat and Cold, Rain and Snow, Sunshine.

Under the influence of the Gulf Stream which runs northeasterly and parallel to the coast of Nova Scotia till it meets the Arctic current flowing down from Greenland ice the climate of the province is tempered, the minimum, for instance, at Halifax in 1916 being $-14°$ and the maximum 89°. Apart from the Gulf Stream, the presence of ocean affects the southern coast much as the climate of Toronto is affected by the presence of Lake Ontario. The mean winter climate registered at Toronto and Halifax was identical in 1916 (27·8°) and 21° higher than at Winnipeg. The summer mean was 62·6° as compared with 69·4° at Toronto and 65·1° at Winnipeg.

These climatic conditions of the seaboard are of vital interest to Canada, for they supply her with a line of harbours open all the year round from Cape Breton to New Brunswick.

The records of the world's average yearly downfall of water run from 458 inches in Assam (905 in 1861) to 2 inches at Port Said, but for useful comparison we may take London, Edinburgh and European capitals in general which show a fall of from 20-30 inches. In a country where during the growing season the sun is powerful and which depends agriculturally so much on pasturage, fruit and general farming, an abundance of rain is important in the absence of irrigation. The average rainfall for nineteen years was 42·46 inches at Yarmouth, 49·43 at Hallfax, and 41·10 at Sydney. In the same period at these points the snowfall averaged 84·2, 76·7 and 92·8 respectively. Ten inches of snow are equal to one inch of rain.

Where snow lies for months continuously, the more there is, the better for transport and agriculture in season. The cold Canadian winter with proper appliances for heating, furs, sleighs, skis, snowshoes and skates has earned more praise than blame, and is balanced by the abundance of sunshine, a "fall" of surpassing crispness and colour, and a summer perfect in its ripening power.

Health.

The death rate stood at 15·20 per 1,000 in 1915, showing a decrease from 16·73 in 1911, while the birth rate went up from 25·03 per 1,000 to 26·08. The Nova Scotian physique needs no comment. On sea and land and in the air for the last five years the world has had a moving picture of the type of men the province contributes to the Empire.

THE FOUR BIG INDUSTRIES.

Fisheries.

The Maritime Provinces stand in a somewhat similar relation to the world-supply of fish as the Prairie Provinces to that of wheat, the fish on the provincial coat of arms indicating the importance of this industry from the first. Each region has a supply of feed "inexhaustible" in theory and under intelligent care inexhaustible in fact. The shallow feeding ground of "The Banks," supplementing those of the "North Sea," supplied Europe with fish before John Cabot came to Labrador in 1497, and to the last day the fish that haunt them will try to spawn in and around the 5,000 miles of indented coast in the North Atlantic. Even in 1600 the English had 200 sail and 8,000 men working off Newfoundland.

FISH DRYING.

The fisheries of the Maritime Provinces since Confederation have been under the control of the Dominion Government. The Fisheries Branch of the Department of Naval Service prevents the pollution of rivers by sawdust, establishes close seasons and keeps in service a sea patrol to safeguard the spawning period, to prevent illegal and out-of-season traps or poaching on closed areas, and to transfer the fry from the hatchery to selected spots.

Hatcheries.

For the present it has been decided to discontinue the lobster hatcheries; those at Arichat, Antigonish and Bay View are, however, retained for biological research. An Order in Council of 1918 forbids the killing of lobsters less than nine inches long, exclusive of the length of claws, between Halifax harbour and a point in New Brunswick. There are salmon hatcheries at Margaree, Windsor, and Middleton.

Oysters.

Oyster beds are planted on the coast of Northumberland strait, and are leased at low rentals. In Nova Scotia the area of these beds is 1,250 acres. The

oyster industry of Nova Scotia is young as yet, but the cold waters of the St. Lawrence gulf produce an oyster that epicures extol and to which Paris Exposition judges have awarded first prize. The 15-inch freak from Prince Edward Island, though no myth, is not, we may say, of standard size.

The Government in several ways aids the fishermen to take advantage of the abundant supply of fish it has taken care to secure. By an Order in Council of September, 1915, an annual bounty of $160,000 is given in aid of sea fisheries and building of fishing vessels. Of this bounty Nova Scotia alone earned more than half ($85,000.65) in 1918. In the fishing season under the Daily Bait Report scheme telegrams are sent directing fishermen to available supplies of moving bait. More than 4,000,000 pounds of fresh fish yearly reach the consumer from Nova Scotia. For the benefit of fishermen and consumers alike the Dominion Government aids in marketing, in inspection of packing and in standardizing the brand.

The six or seven hundred canneries on the Atlantic coast under the departmental eye are systematically inspected for sanitary condition, and the cleanly handling and soundness of the fish. The department also offers expert advice as to the curing of haddock and herring in the Scotch style, the cooperage of proper barrels, and where desired will brand the products after inspection. The Government inspector urges that the inspection of barrel-making and packing be enforced, for trade is helped to steadiness by standardization. Cold storage establishments are maintained at Canso, Mulgrave and Halifax, at Lockeport and Port Hawkesbury.

CANSO HARBOUR.

The produce of the Nova Scotia fisheries, "green" and cured together, had a total value in 1918 of $15,183,949. The industry employed 28,682 hands and uses vessels and gear valued at eight and a half million dollars. Of the total catch the district lying west of Halifax and reaching to the northwest limit of Nova Scotia obtained one-fifth. A considerable proportion of the fish were taken within ten or twelve miles of the coast. The Lunenburg bank fishing fleet

comes within this district. It is to be noted that ninety per cent. of the cured fish are exported to the West Indies, South America, Spain and Europe generally.

The chief fish caught are cod, lobster, haddock, mackerel, herring, hake, halibut, pollock, and salmon, Nova Scotia having a large slice of the most productive lobster region in the world, and in cod fishing being second only to Newfoundland.

Herring.

The herring is not only a national food, cheap, nourishing and appetizing when cured as bloater or kipper, but a necessity for bait. The industry is capable of a very large increase in extent and value. Why is it that the Scotch and Norwegian herring fisheries approach in value that of all Canadian fisheries? In 1912 the Scotch herring catch alone was marketed for $10,438,770. It is not the case that the Canadian herring before being caught is at all inferior. The reason is that the European fishermen catch the "fat," immature herring (18·6 per cent. protein, 3·4 fat) in drift-nets far out at sea, while in Canada the larger adult herring is taken in herring traps and in wide-meshed nets near the coast. In Norway, as in Canada, at one time all the herring fishing was in-shore fishing, until successful experiments proved that the finest herring were to be had farther out at sea, where now hundreds of thousands of barrels are taken by drift-nets every year. In 1904, Mr. J. W. Cowie, a practical expert from Scotland, was brought out by the Government, and after years of observation and experiment, used drift-nets in the open sea and on some occasions secured sixty or seventy barrels in a single night. The catch was cured in expert Scotch style and realized as much as $15.00 a barrel. In 1914-15, at the suggestion of the Biological Board of Canada, the investigations were continued by Dr. Hjort, Director of Norwegian Fisheries, whose researches proved that the types of European and North Atlantic herring are closely parallel. The problem now remains to discover the whereabouts in season of the vast schools of "fat" herring matties which must exist somewhere off our shores. Research is on the track of these 'outside' waters, and, if the 'fat' fish once caught is properly handled by the fishermen, properly cured by trained hands, properly graded and packed in good barrels and carefully pickled, the normal price of a barrel should double.

Shad.

It must be stated with regret that the shad, the most delicious table fish on the Atlantic coast and once the most abundant, is in danger of disappearing from the waters of the Maritime Provinces. Records of this abundance date from 1782; in 1850 the supply was "inexhaustible"; in 1860, besides the fresh fish consumed, 7,649 barrels were cured; in 1872 three seines alone took 100,000 fish at a catch; in 1897 one seine made the record catch of 47,000, but in 1908 this same seine took only 200 fish in the whole season!

The causes for this rapid collapse of a valuable natural resource in twenty years are easy to trace. In the first place the shad was excluded from the Dominion system of fish culture and was thus denied the privilege of proper protection. Hence dams and obstructions in rivers, especially dams built above escarpment line, with no allowance for passage, forbade access to spawning grounds; the breeding fish were all caught by seines, weirs, and nets stretching completely across the mouths of streams, and that with no interval of a certain number of hours as elsewhere; the rivers were also polluted by sawdust and other matter. Thus the fish that laid the golden eggs was killed. During the same period the salmon increased in number and size, a result directly due to careful protection and propagation in Government hatcheries. The remedies naturally suggested were a

close season and regulation of methods of capture, but unfortunately ran counter to other legitimate fishing interests. Shad hatcheries were therefore recommended their success having been proved in the Pacific, where this fish, non-existent before, has by means of artificial hatching over supplied the market. It is true that a large supply of shad eggs are less easy to obtain than those of salmon and must be more carefully handled, but expert hands have overcome this difficulty. A movable shad-hatchery is now in use.

There are other fish in the Nova Scotia limits whose value has not been fully realized; the tunny, tuna, or "horse mackerel" which is considered in France the most important fish for preserved food next to the sardine; or the swordfish, so plentiful off Cape Breton and retailing at 45 cents a pound. Other fish have simply been thrown out—the wolf-fish or "sea cat," with delicious flaky flesh, whiter than halibut; the goose-fish; the skate, whose "wings" are now in great demand; and the 'mother of eels'. Another castaway, the lump fish, is prized as a dainty dish only around Halifax and the bay of Chaleur, N.B.

The roe of most fish, apart from that of the sturgeon (caviare), has not been utilized in Canada as an excellent and nutritious food. In France it is valuable also as a lure in the sardine fishery and is known as "rogue."

We may note that the sea snail or periwinkle is marketed; that "Chester Scallops" are a Nova Scotia specialty, and that a pink pearl from the many fresh-water pearl mussels to be found in Cape Breton island and elsewhere fetched $250 in New York.

Utilization of Fish Waste.

The value of fish waste and of varieties unfit for food as a by-product of a great fishing industry is hardly realized, and the nitrogenous fertilizer, oil, glue, fishmeal, etc., derivable from these are mostly lost.

To encourage the destruction of the dog-fish that roam the sea like packs of wolves and do untold harm to fish and gear, and also to utilise their carcasses and other fish waste, the Government at one time established reduction plants in Nova Scotia. Even the eggs of the dogfish (as large as hens' eggs) have a special value for tanning. The best kind of glue is a product of fish skins, and at Liverpool, England, a plant has been earning $400 a ton for the fats and $100 a ton for the poultry meal made from the fish residues. To us the value of desiccated fish powder as a food for pigs and cattle, if not for men as in Japan, is hardly known.

MINING AND MINERALS.

A general view of the geological features of the province is a key to the distribution of its mining, lumbering and agricultural resources.

The seven counties in the southwest lying between the Bay of Fundy and the Atlantic are occupied by a hard quartzite formation (Lower Cambrian), broken by one very large area and several smaller of intrusive granite. The same formation continues all through the southern part of Halifax and Guysboro counties as far as cape Canso. Exceptions to the above are, first, the narrow strip of trap rocks extending along the Bay of Fundy from Brier island to the Minas basin, known as the North Mountain, and secondly, the triassic stratum of the Annapolis valley which it shelters. Both of these minor formations extend across the bay of Minas into the northern part of the peninsula.

The mass of this northern part, including Cape Breton island, is occupied by the carboniferous limestone and Devonian strata, broken up, however, especially in Pictou county by several other formations (Silurian, pre-Cambrian, etc.).

Coal, Iron, Limestone.

These form the tripod on which the iron and steel industry rests, with all its ramifications into the manufacture of railway materials, mining machinery, guns, ordnance, armour plate, shafts, anchors, ships, bridges, agricultural implements, automobiles, boilers and engines.

The coal leg of this tripod is wholly Nova Scotian and also the limestone but the iron is brought across the strait from Newfoundland.

Coal.

"Outside of the small deposit of Rhode Island anthracite, Canada's maritime deposits stand alone on the entire length of the Atlantic seaboard of this continent." These deposits in Nova Scotia and New Brunswick are considered to be the southern border of a carboniferous basin occupying the greater part of the area of the Gulf of St. Lawrence. The supply, at the present rate of consumption is estimated to last 700 years. The quality of the coal is bituminous and especially suitable for blast-furnace coke, gas and steam. All the richer deposits are above the carboniferous limestone in strata considered to be of the same age as the coal measures of Great Britain.

In Nova Scotia there are four coal-fields with thick seams. The most important of these is the Sydney coal-field on Cape Breton island, which supplies 76·9 per cent of the Nova Scotia output and has an area of about 200 square miles. Its most valuable seams lie between Mira bay and cape Dauphin, extending beneath the sea. The strata are almost free of faults of any size and have gentle dips.

The other fields lie near—the Inverness field, including a series of areas extending for 50 miles along the western shore of Cape Breton island and supplying 4·3 of the product, and the Pictou field, which supplies 8·9, on the mainland. This field has an area of about 25 square miles, and is of intricate geological structure. The presence of numerous faults is balanced by the size of the seams, which vary from 10 to 38 feet. Further west, on Chignecto bay, is the Cumberland coal-field supplying 9 per cent of the total.

In the Final Report of the Fuel Controller, March, 1919, the question of the substitution of coke for anthracite and the profitable utilization of the resulting by-products is fully discussed. The following quotation is suggestive: "There does not seem to be any good reason why Nova Scotia coals should not cover the market for domestic fuel even to the head of lake Ontario. The mines of Nova Scotia are practically all either on or within a few miles of tide-water and good harbours, so that the transportation problem becomes a relatively simple one. The quantity of coal available is enormous, and there is no doubt that the output can be largely increased and put on board steamers at such price as to make the erection of a distillation plant and the invasion of the Quebec and Ontario anthracite market a highly profitable investment."

By-products of Coal and Coke.

Important use was found for the by-products of the 650,000 tons of coke made in 1917. The gas from the 600 or more coke ovens was used in the manufacture of steel; a certain amount of the crude tar, much of which, however, had to go to waste, was handled by the Dominion Tar and Chemical Company, and there was a large export of sulphate of ammonia. Between April, 1915, and the end of September, 1918, about 685,750 imperial gallons of toluene were manufactured in the province from Nova Scotia coal. The manufacture ceased on the declaration of the Armistice.

"The great market now that the war is over is undoubtedly to combine the four products, benzol, toluol, xylol and solvent naptha, as a motor fuel. This fuel has been carefully tested and found to give from 20 to 30 per cent greater mileage than the best gasoline with about 15 per cent greater power, easier starting, no knock with advanced spark and actually less tendency for the formation of carbon in engine cylinders." (Fuel Controller's Report, p. 81).

Iron.

The iron of Nova Scotia is distributed in comparatively small beds and pockety deposits which cannot now compete with the hematite of Newfoundland. The Londonderry mines which were opened in 1849 have been idle since 1908, and those of the Nictaux-Torbrook district, in Annapolis county, though yielding 350,000 tons between 1891 and 1913, are no longer worked.

The source of supply is in the Wabana mines on great Bell island in Conception Bay, Newfoundland. In 1916, 1,012,060 tons of ore were shipped to Cape Breton island, producing 470,055 tons of pig-iron, the price for which rose from $35.87 in 1914 to $199.12 in 1918. The ore is hematite of high grade. The distance of shipment is 400 miles.

Limestone.

The Nova Scotia quarries of the limestone used for flux are all on Cape Breton island and comprise the Marble Mountain quarry in Inverness county worked by the Dominion Iron and Steel Company, the George River quarry, and the Point Edward quarry of the Nova Scotia Steel Company. The first-named produces about two-thirds of the total for Nova Scotia.

With abundant coal on the spot, with iron-ore of very high quality in unlimited amount obtainable close at hand by cheap water shipment, and with harbours such as Sydney and Louisburg available summer and winter for export up the St. Lawrence into the heart of the Dominion or to any other part of the world—Nova Scotia must rank as a most important centre of the iron and steel industry.

Oil Shales.

The strata in Nova Scotia are said not to be favourable for oil or gas, but in Pictou county there is an area of about ten square miles of oil shales which should prove of great importance not only for its high percentage of oil, but from its position in the heart of a manufacturing district, and its accessibility by sea. Antigonish and Colchester counties also contain valuable areas of oil shales.

"We have in some parts of Canada, most notably in New Brunswick and Nova Scotia, very large deposits of oil shales. In Nova Scotia alone, in Pictou county, there has been estimated to be 500,000,000 tons of oil shale, which will yield a minimum of 30 gallons of oil to the ton, of which 50 per cent is available for motor fuel. The remainder makes fuel oil, lubricating oils and greases.

"It is estimated that these shales will yield 400,000,000 barrels of oil, and 7,000,000 tons of ammonium sulphate."

"The oil-shale industry has been a very profitable one in Scotland for years, where they have distilled a lower grade of shale than ours and in most cases have had to mine it the same as coal. Most of our deposits could be mined by open-pit methods. This fact, together with the high yield of oil, should make the development of these deposits a very profitable investment and still further aid in expanding Canadian industry, and supplying products now imported or manufactured from imported raw materials." (Report of Fuel Controller, p. 87).

Gold.

The gold-bearing rocks of Nova Scotia lie in the wide strip of Lower Cambrian quartzite and slate formation which extends from Cape Canso to the Bay of Fundy south of latitude 45° and which is broken by large intrusions of granite areas, mainly in the southwest of the province.

The district is about 275 miles in length with a varying breadth of from 10-75 miles. Its area is figured at 10,250 square miles of which about one-third is occupied by the granite. The gold occurs almost entirely in quartz veins interbedded generally in the sedimentary strata. The more easterly part of the field proves more productive than the westerly for here the greater occurrence of geological fractures and slips have formed more channels for solutions and deposition. The formation of the gold-bearing area has been compared to that of the famous "saddle-reef" of Bendigo, Australia, where veins have proved auriferous to a depth of 5,000 feet.

The recovery of gold in small quantities has been constant since the discovery in 1860.

In 1862, $142,000 worth of gold was taken out, and the value per ton of ore crushed down to and including 1917 has been $8.80 with an average yearly yield of 19,130 ounces. The highest record was in 1898 when 31,104 ounces were extracted. The gold-bearing series of rocks has been divided into the Goldenville or quartzite and the Halifax or slate formations. The Oldham goldfield, 25 miles north of Halifax near the summit of the watershed, has been worked continuously since its discovery in 1861. In the Tangier River district, and to the northwest of this in the Caribou district there are productive mines.

The Goldenville district, in Guysboro county, about 12 miles east of the Halifax county line, had for some years the largest yield in the province. In Yarmouth county a mine at Kemptville netted its owner $306 from one ton of ore and $373 from two tons in January, 1917.

In estimating the value of the gold production of Nova Scotia, which amounted to only 935 ounces in 1919 and to only 344 ounces in 1902, we may remember that Ontario, which now produces 500,000 ounces, produced only 2,011 ounces in the year preceding the Porcupine discoveries. Considering the long continuance of finds, small though they have been, and generally the extent of the field and its analogy to fields that have been markedly successful, Nova Scotia may be considered one of the four or five gold-bearing areas of Canada.

The "Report of the Mines of Nova Scotia" for 1919 alludes to the scarcity of labour, the fuel difficulty, and the high cost of operating the narrow veins, and suggests the more extensive use of the diamond drill and the application of hydro-electric power as possible means of reviving the industry. Elaborate plants with their consequent overhead charges are discouraged.

OTHER MINERAL DEVELOPMENTS AND OCCURRENCES.

Wartime needs led to diligent prospecting and extraction of the less known minerals.

Manganese.

In the new Ross district, Lunenburg county, a company took out high grade ore, averaging as much as 92 per cent manganese dioxide. The waste dumps were also sorted over and the sample ton produced ferro-manganese with 30 per cent manganese and 30 per cent iron. At Walton in the Minas Basin in Hants county, a deposit of manganese in sandstone was prospected, the 15

per cent manganese from which could be concentrated to 45 per cent. The price at one time rose to $250 a ton at Pittsburg. In 1910 Nova Scotia imported 1111 tons.

Magnesite.

A deposit near Orangedale on the Great Bras D'Or Lake, Inverness County, was mined for experimental purposes.

Molybdenum.

From New Ross there were shipments, and Gabarus bay, Cape Breton Island, was also a producer.

Tungsten Ores.

The Moose river district in Halifax county, west of the Tangier river, was noticed in the Report of the Munitions Commission as one of the most productive Canadian sources of tungsten minerals, but little has been shipped from the Scheelite mines in the last few years. Tungsten ore (scheelite), was, however, shipped from Waverley, a point on the Canadian National Railways north of Halifax. This was hand-picked and sold to the Munitions Resources Commission at Ottawa.

Purchases of molybdenum and tungsten by the British Government have ceased since April 30, 1919.

Apart, however, from the need of the above metals for munitions purposes, their uses in peace time point to an increasing demand.

Magnesite is essential as a lining for steel furnaces. *Manganese* is used for steel alloys and also in making dry batteries and glass. *Molybdenum* also in a steel alloy produces the strength and toughness necessary in airplane motors, automobile and tractor construction and in shafting and springs. *Tungsten* as a steel hardener is more limited in its source than molybdenum but is specially needed for high speed tools and electric bulb filaments.

Tin.

"The occurrence of tin ore (in Canada) has been reported from several localities, the most important, perhaps, being the discovery of cassiterite near New Ross, N.S." (Mineral production of Canada, 1916.) See Reports of Geological Survey for 1907 (p. 77), 1908 (p. 154), 1910 (p. 253) 1912 (p. 389).

Antimony.

In the West Gore district of Hants county, 533 tons of antimony concentrate was mined in 1918.

Zinc.

In Richmond county (Cape Breton Island) the prospects are encouraging, the analysis of an extensive body of ore showing from 4-30 per cent zinc, 7·5 per cent lead and 3·5 per cent copper.

Barytes is found at Scotsville and East Lake Ainslie, Inverness county. In 1918 Nova Scotia produced 500 tons out of 600 in all Canada.

Tripolite or Diatomaceous Earth.

Of this Nova Scotia at the present time has the only deposits in working in Canada. A company shipped 500 tons, valued at $12,000, from lake Silica in Colchester county in 1918. It has also been shipped from St. Ann, Victoria

county, and the Bass Rock lake (Cumberland county). Other deposits are found near Liverpool (Queens) and near Dartmouth and at Point lake (Halifax). Tripolite occurs in shallow layers at the bottom of small lakes and is used as a polishing material and for other economic purposes.

BUILDING STONES.

It was not for lack of stone in Nova Scotia that Government House, Halifax, was built of blocks sent from France to fortify Louisburg. Although at the present time the quarries of Nova Scotia are with few exceptions idle, it is important in view of the future demand for building material to state where it can be best obtained.

Building stone is, in general terms, either limestone, sandstone or granite.

Limestone.

The limestone of Nova Scotia has been little used for building purposes, though the crystalline limestone or marble obtainable from Marble mountain has attracted the attention of experts. Here there are at least six varieties running from fine white statuary marble to dark, striped and variegated. The Grand Quarry may also be mentioned as the centre of a field of 200 or 300 acres about 450 feet above the lake and 300 yards from deep water. From this quarry immense building blocks could be removed, but so far the rock has been used almost entirely for lime and flux. As long ago as 1879 the Geological Survey suggested the working of this field as "a new industry and source of wealth in Cape Breton island," but development lingers.

Sandstone.

The building sandstones of Nova Scotia have been used in the past more than they are at the present time. The red sandstone of Amherst has been used in most of the public buildings of the town and also in Truro, and has been shipped as far west as Hamilton and Toronto.

The greenish-grey sandstone of the Wallace district on the shore of Northumberland basin has been worked for 100 years and been used for many buildings in Quebec, Ontario and in the Maritime Provinces. It has also been shipped to New York, Boston and Providence. The Victoria Museum at Ottawa is partly built of this material and trimmed with the blue variety which lends itself well to carved work. In 1917 only one company was shipping building stone. Its product was about 25,000 tons. Shipping facilities are good both by water and rail. A red sandstone has been shipped from the River John area to Toronto and elsewhere and the olive-green variety known as "Pictou" stone, the amount of which is practically unlimited, has been much used for public buildings, churches, etc., in the Maritime Provinces. To this stone a medal was awarded at the Colonial and Indian Exhibition in 1886. At West River, near Scotsburn, in Pictou county, there is a grey sandstone of fine grain and excellent quality, and in the Whycocomagh area at the head of Saint Patrick's channel there is a body of red sandstone four miles from tide-water.

Granite.

There are a few areas in the mass of granite intrusives between Cape Canso and Yarmouth where granite has been found suitable for building and decorative purposes. The Nictaux fine grey stone is in demand for monumental work. The granite of the New Germany district in Lunenburg county has been made use of

for heavy construction, such as bridges. Shelburne county has an excellent fine grained granite which can be seen to advantage in the Customs building and Post Office at Shelburne. The Halifax area has fine quarries lying at the edge of the granite mass extending west from Halifax harbour. This is a very coarse stone with black spots, in unlimited amount, and can be seen in St. Mary's cathedral in Halifax. The Bank of Commerce building at Halifax is built of granite from the disused quarry at Terence bay. There is also a massive field in Guysboro county, at Whitehead, forming a cliff of 12 feet above high water such that vessels could be loaded directly from the shore. The material is a rather coarse grey to white granite and is considered the most promising in the province for the production of heavy stone.

Decorative Stone.

Volcanic rocks of porphyritic or brecciated structure occur in several areas, the best known of which is Scatari island, off the extreme edge of Cape Breton. The coast is strewn with pebbles displaying a profusion of beautiful colour when wet. The cost of production would be considerable in the extraction of good sized blocks, but there is an enormous amount of stone of unusual beauty, very hard and taking a fine polish. The green and red-brown slabs to be found among others in many museums, are particularly attractive.

Grindstones.

Pictou county shipped 300 tons of grindstones in 1919, these being almost entirely tool stones, the larger stones required for the pulp industry being a product of New Brunswick. It is possible that pulp stones of the necessary size (standard 54 inches diameter and 27 inch face), texture, grinding quality and strength could be produced near Amherst and other places. The life of a pulp-stone is about one year only, so that there is a continuous market. The stone when quarried is comparatively soft, but hardens by exposure in storage.

Lime (hydrated).

Only one firm is reported as manufacturing lime in Nova Scotia. This firm produced 748,316 bushels in 1918 at a value of $149,663.

Sand.

Moulding sands for foundry work are available from deposits near Elmsdale, Belmont Station and Dartmouth. It has been suggested (Geological Survey vol. IX) that the stretches of white, windblown, silicious sand, many feet deep, lying in the neighbourhood of Port Mouton (Queens) and Barrington bay (Shelburne) might also prove of economic importance.

Road Material.

A large supply of the best possible road material, easy to move and ship by water, can be got from the trap rock of Digby neck.

Amethysts, etc.

Mineralogists will be interested in the amethysts found in the Bay of Fundy region. At Partridge island, Cumberland county, crystals, an inch in breadth, have been found covering foot-square surfaces. As early as the years 1605-10 crystals were sent from Partridge island to Henry IV of France and one from Blomidon was among the French crown jewels. A bushel of amethyst was found in the digging of a well at Kentville and they occur in several localities about the

basin of Minas. Chalcedony (white, red and blue) carnelian, agate and jasper are also to be found. The exposures at Joggins of formations rich in fossils and mineralogical specimens are celebrated among geologists.

Salt.

The recent discovery of a bed of rock salt may prove of great importance to the Maritime Provinces, where the fishing industry alone consumes 50,000 tons a year. The deposit was found under a farm near Malagash, Cumberland county; in October, 1918, the prospect shaft struck rock salt at 85 feet, and has now penetrated 38 feet in the formation, which according to present borings may have a thickness of 175 feet, and extend over an area of 5000 square feet. The amount of deposit is estimated at millions of tons. Some of the samples taken from this deposit have shewn high percentages of potassium salts.

So far the only salt-producing district of large extent in Canada is in western Ontario, the salt needed in the Maritime Provinces being imported from Turks island and the Mediterranean.

Brine springs have been located in Nova Scotia at various points between Baddeck and Springhill, but no rock deposit of economic value was discovered until now.

Gypsum.

The gypsum deposits of Nova Scotia are the largest of any at present known in Canada. Outside of coal, gypsum is probably the most important mineral, as regards tonnage, being exploited in the province, and even yet only a small proportion of the available deposits is being operated.

The mineral occurs in the lower carboniferous formation and is closely associated with beds of anhydrite and limestone. Numerous outcrops are encountered throughout the whole of the northern half of the province, extending from the district in the neighbourhood of Windsor, Hants county, eastward to the district around Antigonish, Antigonish county, and also through the northern half of the island of Cape Breton.

Many of these deposits are exposed in cliffs which vary from 50 to 200 feet in height and are easily accessible to rail or water transportation. Large shipments were made from the Windsor district as far back as 1829.

The gypsum on the whole is massive and is a good quality of white rock. Selenite is occasionally found associated with the massive gypsum, sometimes in veins up to a foot in thickness, and sometimes as small crystals evenly disseminated through the massive material.

During the year 1918 there were four quarries operating and two calcining plants were being worked. The tonnage mined for the year 1919 was 48,868 tons, a greater part of which was shipped in the crude state to the United States for calcining. The Dominions Royal Commission Report (February, 1917) remarks that "the people of Canada had to buy the gypsum back in the form of plaster at a greatly enhanced price."

A report entitled "Gypsum in Canada, its occurrence, exploitation and technology," has been published by the Mines Branch, Department of Mines, Ottawa, in which the deposits of this mineral in Nova Scotia are described at length. A copy of this report can be obtained by applying to the Director, Mines Branch, Department of Mines, Ottawa.

Clays and Shales.

Nova Scotia is more liberally supplied with raw materials suitable for the use of the clayworker than any other province of the Dominion. This is in large part owing to the presence of Carboniferous Coal Measures, as this series of rocks in addition to the coal beds also contains numerous beds of clays or shales.

Very valuable clay beds of Cretaceous age occur at Shubenacadie in Hants county, and in the Musquodoboit valley in Halifax county. These clays resemble the stoneware and fireclays of an extensive clayworking industry.

The late marine or Pleistocene clays are found at many localities, notably in the Annapolis valley and along the line of the Canadian National railways between Enfield and Shubenacadie. These marine clays are generally reddish in colour, occur on the surface, and are soft and stoneless. They furnish the raw material for a good cheap red building brick, and for field drain tile or flowerpots.

The shale deposits are seen to best advantage in the Sydney, Inverness, and Pictou coal fields in natural exposures, either in cliffs along the Atlantic coast or along the sides of stream valleys. The shales are constantly encountered in coal-mining operations, especially when cross-cutting the measures from one coal seam to another.

A very complete description of these shale beds accompanied by the results of physical tests on samples collected from them is given in the report on Clay and Shale Deposits of Nova Scotia by Messrs. Ries and Keele, and published by the Department of Mines.

From this report we gather the information that all of the shale beds in the Carboniferous measures are plastic when ground and worked up with the required amount of water and consequently can be formed into ware of any desired shape by almost any type of clayworking machinery.

The list of ware that can be made from these shales includes common building brick, face brick, hollow building brick, sewer pipe, electric conduits, floor tile, roofing tile, paving brick, firebrick, stove linings, garden urns, chimney flues, etc.

It is stated that while none of the beds in the Carboniferous measures are highly refractory except in one instance at Inverness, that there are several beds of semi-refractory shales in the Pictou coal field which are extremely useful in the steel industry or for the manufacture of sewer pipe or other vitrified wares.

The real fireclays in Nova Scotia are seldom found in the Coal measures but occur as soft beds of Cretaceous age at the localities given above. These clays are also used in the manufacture of stoneware goods.

One of the best refractory materials in the province is not a clay at all, but a hard rock known as felsite, a large deposit of which occurs at Coxheath not far from the city of Sydney. This material when crushed to the proper size and bonded with plastic fireclay makes a very superior grade of refractory brick.

The southwestern part of the province between Halifax and Yarmouth appears to be lacking in clays either of the hard or soft variety. At a few points in this district, there is a material of peculiar interest known as infusorial earth. This is a very fine grained siliceous deposit of organic origin and has many uses in the industries. Its chief use in the clayworking industry is in the manufacture of insulating brick, which is used to such great advantage in conserving heat in furnaces. A large deposit of this material occurs on the Liverpool river in Queens county.

In addition to the clay resources there are still other materials which are included under the general head of ceramics, one of the most important of these being silica rock. There are extensive beds of quartzite in Cape Breton which contain over 95 per cent of silica and are found to be suitable for the manufacture of silica brick.

Silica brick is becoming a very important item in metallurgical and b product coke-oven practice and a large quantity, representing a good deal of money, for they are expensive, is imported into Canada every year.

CLAYWORKING INDUSTRY.

The vast and varied resources of clays and shales in the province of Nova Scotia have been little developed up to the present. Timber has hitherto been cheap and plentiful, consequently wooden construction has prevailed and in some localities it was used entirely for structural purposes. Some of the most disastrous fires on record in Canada have occurred in the towns and cities of the Maritime Provinces, owing to the rapidity with which fires spread over an area of closely-built wooden houses. Equally disastrous fires are bound to happen in the future unless building with brick becomes more general. The Maritime Provinces are well provided for using clay products for structural purposes, as they possess a great variety of the raw material as well as the coal fuel for burning the ware, and now when wood is becoming expensive it is more difficult for it to compete with brick on the score of economy.

As far as structural materials are concerned the clayworking industry of Nova Scotia is confined at present to the manufacture of common red brick made from the surface clays. These bricks are used for face brick as well as for backing and filling, but if a face brick of special colour, finish, or texture is desired it is necessary to import them.

Face brick which cannot be excelled by any imported article may be made from several of the shale beds in the Pictou coal field and at other localities.

Hollow building blocks, or fireproofing, as these wares are sometimes called, are not made in the Maritime Provinces, but their use is becoming very general in all other parts of Canada. They are cheaper to build with than brick and on account of the hollow spaces are said to make better walls in dwellings for withstanding the effects of extreme changes of temperature to living conditions. When housing problems are being considered all possibilities regarding the best material to use must be taken into account and when a suitable material is not being produced steps should be taken to encourage its manufacture.

Sewer pipe is made from certain of the shale beds in the vicinity of New Glasgow. This is an excellent glazed pipe and the facilities for output are ample to supply all the demand in the Maritime Provinces for this class of ware.

A small quantity of field drain tile is made at the brick plant at Avonport, in Kings county.

Underdrainage of farm lands, however, is bound to increase when its benefits are realized, and a much greater demand for tile is sure to come in the future. Most of the surface clays mentioned in the report of the Department of Mines are suitable for the manufacture of agricultural tile.

Firebrick for lining the ladles used in the steel works are manufactured from the semi-refractory shales which are mined with the coal at Westville. These brick are hard and dense in structure and give better satisfaction for ladle linings than a more refractory brick.

There is a good deal of unnecessary use made of firebrick in many cases where a less refractory brick would do, so that the shales at Westville could be made into brick for many purposes where high refractoriness was not the only thing to be considered.

It is possible that some of these shales could be used for the manufacture of architectural terra-cotta, a material that is steadily increasing in use as a facing for business buildings in cities. This class of clay ware is not made at present in Canada.

Red and buff floor tiles or roof tiles can also be made from these shale beds. Large quantities of these goods are imported from Great Britain and the United States.

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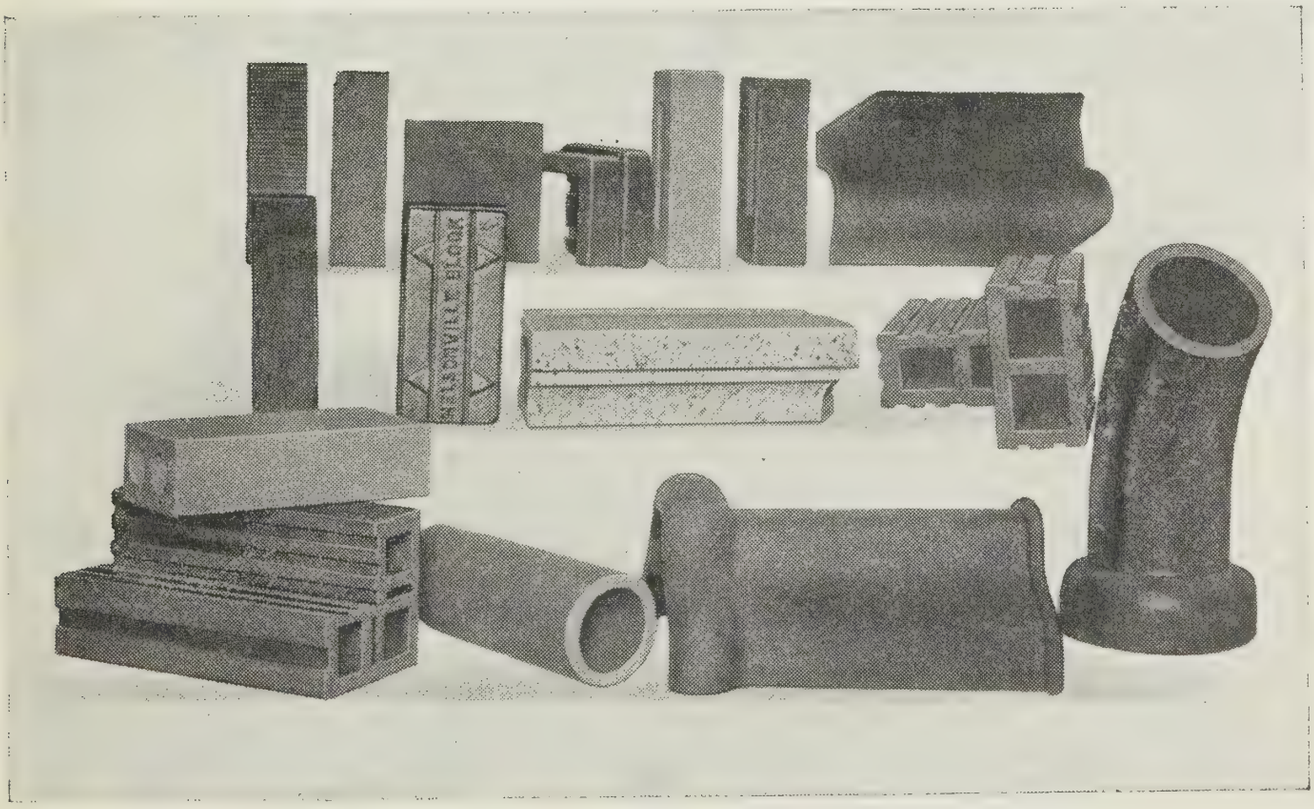
* This memorandum was prepared by Mr. Joseph Keele, B.Sc., of the Mines Branch, Department of Mines.

So far as can be ascertained, the manufacture of pottery has never been attempted in Nova Scotia, except by the small plant at Enfield, which makes the ordinary red flowerpots from the surface clay in its neighbourhood.

There are excellent stoneware clays at Shubenacadie and Middle Musquodoboit. At St. John, N.B., the clay from the latter point is used for making tea pots, bowls, jars, crocks, etc., and is found very suitable for the purpose. The firm obtained its clay from New Jersey until a few years ago.

CLAY PRODUCTS



The tourist trade in Nova Scotia offers a good opportunity for the manufacture of clay wares for souvenir purposes. At present we have nothing to offer visitors in the way of ornamental work made of Canadian material by Canadian workmen or workwomen, except possibly some birch bark, deer skin or sweet grass articles.

Many visitors would gladly purchase small pieces of clay ware if they were of local manufacture, made from local materials, and had some distinctive qualities besides.

Clayworking with a view to developing this branch of its technique might readily be taken up by the technical schools, but so far they appear to have neglected this very important branch of manual training.

Several experiments have been made at the clay testing laboratories of the Mines Branch at Ottawa on the suitability of some of the clays of Nova Scotia for modelling and pottery-making. It was found that some of the stoneless brick clays of the Annapolis valley will make good red ware which can be enamelled with the ordinary majolica glazes.

The clays of Shubenacadie and Musquodoboit are excellent modelling clays which could be used for instruction work in technical schools and for making the finest kind of glazed art pottery. (Note.—The products in the illustration are all made of Canadian clays, and though not entirely Nova Scotian, could all be duplicated from Nova Scotian material.)

FORESTRY.

In 1918 Nova Scotia ranked fifth among the provinces in lumber production with a cut of 166,332,000 bd. ft., valued at $4,089,039. Spruce is the chief cut. In 1915, 63 per cent of the saw timber figured as spruce, 18 per cent hemlock and 9 per cent white pine.

In 1904 the Nova Scotia Government, in order to protect the forests from further damage by fire, passed an Act, entitled "The Forest Protection Act." This Act, which was consolidated in 1913, has reduced the annual fire loss to small proportions. In 1909 Dr. B. E. Fernow, of the University of Toronto, was engaged by the Provincial Government to make a reconnaissance survey of the forests of the province. Careful estimates in his report entitled "Forest Conditions of Nova Scotia" show that, in spite of the fact that an area of two million acres has at one time or another been so severely burned that it is now semi-barren of commercial trees, there were still, in 1912, 5,774,000 acres of coniferous saw timber on the mainland. This area, with the addition of that to be found on Cape Breton island, should yield ten billion feet of merchantable saw timber for Nova Scotia as a whole.

The reserve of pulpwood figured out at 24 million cords, viz.: 12,000,000 cords in the 'pulpwood and mine-prop forest of Victoria and Inverness counties, 2,000,000 in the other parts of Cape Breton island, and 10,000,000 cords on the mainland. The pure hardwood area of Nova Scotia amounted to 526,824 acres.

Timber conditions in Nova Scotia are related to the geological formation. The granite area, while seldom affording good farming land and showing a proportion of swamp and of natural or burned over barrens, has good forest soils, the thinner soil on the ridges for fir, that of the steeper slopes for mixed growth, that on the gentler slopes and on the bases for spruce and hemlock. The quartzite areas, composed of rock less easily disintegrated than that of the granite they enclose, show more frequent barrens. It is the slate formations that occur in these areas and the better of the glacial deposits in the valleys that provide good farm lands and show a finer forest growth. The timber of the northern slope, which drains into the basin of Minas and the Northumberland strait,

though of the same character as the timber of the Atlantic slope, is more luxuriant, owing to the wide spread diversity of limestone, slate, sandstone and conglomerate.

The trees that make up the bulk of the forests of Nova Scotia are:—

1. Conifers.

Red spruce found everywhere, though of larger growth in the moister parts. This is the principal lumber tree of the province.

White spruce, less valuable than the red, rare in Nova Scotia, but found in the coastal districts, especially in Digby and Yarmouth counties and on the Canso side of Guysboro. In Canada as a whole this is the tree most used for pulp.

Black spruce, on swamp lands, useful for pulpwood and mine props.

White pine (second growth) in Queens and Shelburne counties. This is the highest priced of the pines.

Red pine in Lunenburg and Queens counties and generally on sandy plains.

Balsam fir, (wrongly called white spruce in Cape Breton island) found in all parts but especially in the virgin tract of 500,000 acres in Victoria and Inverness —a tree as good as spruce for pulpwood, but short-lived and subject to early rot.

Hemlock, found chiefly in Annapolis county and the interior of Digby, where it forms 60 to 70 per cent of the uncut stands.

Hardwoods.

Beech, the most abundant of the hardwoods, more common in the west than in the east.

Maple, (mainly sugar maple) is the most abundant hardwood of the Maritime Provinces next to birch.

Yellow Birch, growing more abundantly in the eastern counties than either beech or maple.

Oak, (almost entirely red oak), comparatively scarce. This tree could be reafforested; of that in use in the Maritime Provinces 75 per cent is imported.

A forest map of Nova Scotia shows few virgin timber tracts, the largest on the mainland in 1912 being the 25 square-mile tract of hardwood near Parrsboro and 20 square miles of pine in eastern Halifax county. Three-quarters of the forest area is mixed growth of hardwood and conifer.

CLASSIFICATION OF LANDS AND FORESTS (1909-10).

Description.	Per cent.
Mainland—	
Farm lands (cleared)	19·0
Meadow (natural)	0·2
Savanna (open bog)	0·4
Forest, (a) conifers	10·8
(b) hardwood	3·4
(c) mixed	38·3
Burned and barren lands	5·8
Unclassified	22·1
	100·0
Cape Breton Island—	
Cleared lands, farms, mine dumps, etc	17·9
Forest, (a) conifers	35·1
(b) hardwood	8·0
(c) mixed	19·6
Burned and green barrens	18·6
Unclassified	0·8
	100·0

Special uses of timber.

The spruce is not specially strong or durable but is much used for joists and light structural work, for inside and outside finish and for a variety of manufactured articles. The use of red pine for construction work has been replaced by Douglas fir or southern pine, but it is still used for masts, spars, piling and deck plank, and especially for car construction. It is considered the best eastern wood for paving blocks and for water tanks.

Hemlock is especially suitable for underwater construction and for joists, rafters, concrete forms, etc.

Birch, maple and beech are used mainly for hardwood flooring, car construction and furniture.

Balsam fir is used for pulp, boxes and cooperage.

Poplar is the wood for excelsior and berry boxes.

Tamarack (hackmatack or larch) is used for ship-knees and treenails.

By-products of wood.

Apart from the fact that now most large manufactories save material and gain profit by using up their short pieces in the manufacture of smaller articles, it may be noted that shavings are sold for bedding, packing, and for drying wet land, and small waste pieces as a substitute for gravel in cement work; that hardwood sawdust is good for smoking meat, and that sawdust besides its use for screw cleaning can be manufactured into valuable briquettes for fuel, and when combined with crushed marble is used as building material.

(*Vide* "Wood-using Industries of the Maritime Provinces," Forestry Branch Bulletin, No. 44, by R. G. Lewis and G. H. Boyce.)

Distillation of Hardwoods.

Maple, birch and beech are the hardwoods mostly used for the extraction of acetic acid and methyl alcohol both of which are on the list of important Canadian exports. In Ontario and Quebec there are eleven such industries; there are none at present in Nova Scotia.

Pulp.

Pulp in Nova Scotia is made chiefly from the black and red spruce, though a good deal of balsam fir is also used.

PULP-MILLS producing in 1918.

Campbell Company	Weymouth
Clyde River Co	Clyde River
Macleod Co	Milton
Medway Pulp and Power Co	Mill Village
La Have Pulp Co	New Germany.
St. Croix Co	Hartville
C. Breton Co	Murray. St. Ann.

These seven active pulp-mills, with a daily capacity of 182 tons in 1919, all use the mechanical or ground-wood process, though elsewhere the sulphite chemical process is becoming general.

Of millboard and pulpwood board the United Kingdom in normal times imported 1,800,000 cwt. of which Germany's share was 175,098, Russia's 412,598, and Canada's 225,615 cwt. Looking at the raw material available and the nearness to shipping points, a larger part of this trade should fall to Nova Scotia.

When we consider that "from the cradle to the coffin," in some shape or other, wood surrounds us as a convenience or a necessity; that it would be impossible to name an industry which could be carried on without wood, directly or

indirectly, that the combination of qualities, such as elasticity, non-conductivity of heat and electricity, gives us a material for which no substitute has yet been found, and that the substitution of other materials in many cases tends to increase the use of it—the practical value of a forest policy which will provide a future supply becomes evident.

Peat.

The Dominion Government has for some time been experimenting with a view to the economic use of peat. The Department of Mines has examined and reported on eight of the Nova Scotia peat bogs, three in Yarmouth county, three in Shelburne, and one each in King's and Lunenburg, a total area of 8,671 acres. Of these the Cariboo bog in King's would supply not only fuel but a fertilizer for the fruit district in which it lies. The Tusket, Makoko or Heath bogs would produce a cheap fuel for the district of Yarmouth. In Northern Europe the use of peat in various forms is general. Experiments have shown that the calorific value of peat powder is seven-tenths that of coal. In Denmark when the war entirely stopped importation of coal, the railroads, many dairies, brick and glass factories, etc., were dependent for fuel on the product of the ninety-seven Danish peat plants.

AGRICULTURE.

There is abundance of fertile land in Nova Scotia for general farming and especially for the small holdings which should supply the needs of the larger towns, the manufacturing and mining centres and the summer visitors from the crowded cities of the United States. With the exception of the Annapolis valley or "Garden of Nova Scotia," and the dyked or reclaimed lands which have long been a feature of the province, there are no wide or continuous stretches of cultivated soil. Nor are there any large rivers with rich and broad valleys, but there are a hundred smaller rivers and streams, the intervales of which give fertile soil in the slate as in the richer limestone formation. In the seven northern counties, including Cape Breton island, conditions of soil, climate and topography have resulted in a greater proportion of good land and therefore of wider clearings than on the Atlantic slope. In these southern and western counties one of the most fertile intervales is that of the Musquodoboit river, the upper branches of which run through a limestone formation. This valley has been opened up by a recent 80 mile extension of the Canadian National Railways to a point 40 miles east of Halifax. In the slate formation also there are rich intervales such as the Tusket valley between Kemptville and the sea and the valley of the lower Sissiboo. As a rule, however, the cultivated land in these counties lies along the seaboard, for the interior granite areas do not invite settlement. The uplands of the province with their moist climate and good pasturage provide, according to a report of a Scotch commission, a million acres admirably adapted for sheep ranges. For all young stock the natural grass and clover will continue to be an economic source of feed.

The 50,000 acres of dyked marsh lands reclaimed from the sea, lying mainly at the head of the Bay of Fundy, have for a century or more produced crops of hay up to three tons per acre. Their continuous fertility is due to the rich mud brought in by the tide and either deposited on the land by flooding or spread on the higher level.

The average price of farm land in Nova Scotia, as in British Columbia, is raised by the large proportion of valuable fruit farms. Improved farms, however, are still to be had, at $25 an acre. Lists of lands for sale are prepared by the Nova Scotia Government Department of Industries and Immigration in Halifax, N.S.

TABLE BY COUNTIES OF LAND IN AGRICULTURAL USE, 1918.

Seven Southern Counties.	Pasture.	Total.	7 Northern Counties	Pasture.	Total.	Cape Breton Island.	Pasture.	Total.
Lunenburg	83,937	148,475	Kings	129,240	245,024	Inverness	69,976	140,010
Halifax	70,699	121,587	Cumberland	101,395	206,007	C. Breton	51,235	92,944
Digby	74,844	111,204	Hants	85,442	163,117	Victoria	44,530	82,117
Yarmouth	50,612	77,616	Annapolis	82,288	157,084	Richmond	18,374	39,427
Guysboro	37,800	64,764	Pictou	59,085	156,019			
Queens	22,848	36,486	Antigonish	74,775	131,155			
Shelburne	8,237	16,062	Colchester	66,502	130,764			
Totals	348,977	576,194		598,727	1,189,170		184,115	354,498

(The above table is exclusive of about 36,000 acres planted to apples).

In 1919 the Natural Resources Intelligence Branch of the Department of the Interior, Ottawa, published "A list of unoccupied and uncultivated lands in the province of Nova Scotia," which comprised 1,455 farms arranged according to counties with the acreage of each farm and the name and address of the owner.

The Canadian Pacific Railway Colonization Department also publish from time to time a list of farms for sale.

Any of the above publications are mailed free of cost to applicants.

PRICES OF FARMING AND FRUIT LANDS AS IN FEBRUARY, 1920.

Mixed farming counties (Colchester, Cumberland, Pictou, Antigonish and parts of Hants), cultivated land from $20 to $100 per acre.

Fruit counties (Annapolis, Kings, Hants) from $60 to $200.

Dyked marsh land (Bay of Fundy and Minas Basin) from $80 to $300.

Fruit lands in the sand belt, from $15 to $30. (Cost of producing bearing trees brings total price up to that of the naturally good land.)

"Intervale" land in any county, from $30 to $100.

Pasture land (rough cut over timber land), $5 to $20.

Woodland, $4 to $10.

Such in general being the field of operation for those who use the soil, it can now be pointed out what lines of farming are or should be profitable.

Hay and Roots.

For beef and dairy cattle and for sheep hay and roots are essential, and the climate of Nova Scotia has the moisture as well as the sunshine needed for their growth. Clovers, red, alsike and white, grow abundantly, and certain varieties of hardy alfalfa are coming into use. The Nova Scotia Agricultural College has experimented with the various alfalfa seeds and find that 'Grimm' and 'Ontario variegated' passed the test of the severe winter of 1916-17.

Turnips at Truro Agricultural College have produced 1,000 bushels to the acre, the estimated average of 553.8 for the province for 1918 pointing to the value of scientific production. Yarmouth has a reputation for good swede seed, and at the Dominion Experimental Station at Kentville selected turnip, mangel and carrot seed are produced in bulk.

Sheep and Wool.

The sheep industry in the Province is more than 200 years old, records of 1693 telling of 173,271 sheep in "Acadia." In 1917 Nova Scotia ranked fourth among the provinces in the number of sheep with 200,979 and was second only to Quebec in the price obtained for wool (39 cents per pound unwashed to 49 cents washed). Nova Scotia wool owes its superior quality to its low shrinkage as compared with wool from other parts of Canada. In 1918 the estimated number of sheep had risen to 259,847. With wool in 1918 at 52 cents per lb. in the world markets as compared with 23c. in 1914, and the price since these figures were compiled bounding towards the dollar, sheep farming is a tempting investment, the more so when the well watered upland pasture can be had at from $7 to $10 an acre. All the coarse wool large breeds do well in Nova Scotia, such as Leicesters, Lincolns, and Cotswolds, and also the medium wool breeds such as Hampshire, Cheviot, Shropshire and Southdown. The climate on the mainland demands shelter for sheep for the winter months, though on certain islands along the south shore they are out all the year and feed on the sea kelp washed up on the shore. These are the wild sheep descended from those brought in by early settlers. Enterprising farmers on the south shore, seeing that they fed off the

kelp in winter, corralled them on nearby islands. In Nova Scotia, so far, small flocks of from 15 to 75 have been the rule, but with the million acres of good pasturage available, often with white clover naturally growing, the tendency is to put the industry on a wider basis. With a view to improve the breed of sheep the Dominion and Provincial Governments are co-operating to provide for the farmer young ewes and rams of selected stock at prices little higher than those paid by the butcher for killing. Nearly 35 per cent of the sheep are found in the three neighbouring counties of Inverness, Antigonish and Pictou. Recent legislation imposes a tax on dogs and provides compensation to owners for loss of sheep injured by dogs.

SOUTHDOWN SHEEP, PICTOU.

The Co-operative Wool Growers.

In 1911 the Sheep Commission appointed by the Minister of Agriculture regretfully reported that "from shearing to marketing no country in the world handles its wool in a worse manner than Canada." This is not so to-day. In 1914 the Sheep Division of the Agricultural Department was organized and, throughout the Dominion, Wool Growers' Associations were formed to produce, classify and market good wool. In the first year only 209,129 pounds were thus graded and sold, but in the year ending August, 1918, 2,097,909 lbs. The Co-operative Wool Growers, Ltd., has recently been incorporated with warehouses in Toronto. Thus Dominion wool is now intelligently sheared, packed and sorted.

There are to-day three Wool Growers' Associations in Cape Breton Island with grading stations at Port Hood, St. Peter's and Sydney; there are also associations at Guysboro, Antigonish, New Glasgow, Amherst, Kentville, and Yarmouth.

Nova Scotia wool is recognized as the best of Canadian clips, but where flocks are small, co-operation is a necessity. The total Nova Scotian clip in recent years amounted to about one million pounds.

Pure-bred Live Stock.

Provision is made by the Dominion Government for the supply of pure-bred sires in cattle, sheep and swine to associations of ten or more farmers who unite and who comply with a few simple regulations. In all Canada there were 2000 such associations in 1918. In Nova Scotia there were 29. The increase of such associations would improve the breeds of live stock in certain districts where they have shown a tendency to deteriorate.

Horses.

With the coming of the "car" light horses are not so much in request, but in Nova Scotia much is being done to improve the heavy breeds, Clydesdales, Percherons, etc. In 1918 there were 70,101 horses and not enough being bred to keep up the supply. An Act of 1913 provides that every stallion offered for service in the province must be enrolled with the Department of Agriculture.

Cattle.

The total head of beef and dairy stock in Nova Scotia amounted in recent years to 400,000, so that there is room for a very large increase. For beef, Herefords, Angus, Devons all do well; for dairy purposes, Jersey and Guernsey, Ayrshire, Shorthorns and Holstein.

At present there are no abattoirs in the Maritime Provinces. To say nothing of local consumption, a fair amount of live stock for export would probably be available if there were abattoirs, and abattoirs would probably be built if cold storage facilities were adequate.

Dairying.

Dairying can be indefinitely extended. In 1911 there were 152,000 cows producing on the average 3,300 pounds of milk, in 1919, 160,000 producing 3,600.

In 1911 there were 275,000 pounds of creamery butter, in 1918 1,756,905 pounds, in 1919 2,093,000 pounds. In 1918 68 per cent of the butter was home-made, but the patrons of the creameries increase yearly.

"Cheese making in 1919 decreased almost to the vanishing point," a fact due in part to the far larger consumption of ice-cream and milk.

In 1916 there was only one condensed milk factory.

The Government railways provide a weekly refrigerator car service for butter, of which shippers can forward any amount from a one-pound package up, being guaranteed a certain proportion of the carload value. The butter must be inspected at Halifax.

With the growth of co-operative ideas and knowledge of up-to-date methods, admirably fostered by the work of the Nova Scotia Department of Agriculture with headquarters at Truro, the province should be able not only to supply its own demands and contribute to those of the Dominion, but to ship in larger quantity to Britain which consumes yearly five hundred million pounds of imported butter. Before the war, weekly train loads of butter were collected in Siberia, sent by rail to Riga, and thence by water to England, where it was sold as Danish butter. Nova Scotia can well compete with Siberia.

Cold Storage.

Government officials are now surveying the situation in reference to the provision of a public cold storage plant at Halifax. Cold storage facilities at harbours and on ships are a first need in view of the expansion of the trade with Europe in butter and eggs, fruit and other perishable products.

Poultry and Eggs.

Here again the demand is far greater than the supply, One of the difficulties has been the cost of feed, now mostly imported into the province at more than double the cost of a few years ago. The manufacture of poultry food from fish waste would do much to help, and the Poultry Department has aided in supplying buckwheat seed for any spare land the householder may have. Co-operative Egg Circles are now collecting the eggs and marketing them at top prices. For instance four circles collected 15,000 dozen eggs, stored them in tanks containing water-glass, the Government supplying the tanks, and thus added $1,500 to the profit. The industry is also aided by poultry clubs and shows and by the erection of demonstration houses at various points as models for the poultry-keeper. The report of the Agricultural Department gives a detailed record of a profit of $513.09 on an outlay of $580.76.

Hogs.

Nova Scotia ranks only seventh among the provinces with its 68,000 swine. The value rose from $18 per head in 1916 to $28.75 in 1917. As a consumer of the separated milk returned from the creameries and of garbage otherwise wasted, the hog is a money-maker all the time.

Mining centres like Sydney and New Glasgow offer immediate returns for farm products, such as eggs, bacon and vegetables. When a miner is working in a tunnel at a temperature of 84 degrees, he needs four or five meals a day, and earns high wages. As wages rise, so does the price of food, and almost the full benefit of this high price in local supplies is or should be the perquisite of the farmer and his family and of them alone in any community.

Goats.

The world is not overstocked with goats. In 1915 the globe was ransacked to feed the Indian troops at the front. Agricultural departments have pointed out the productive value of this animal which eats anything anywhere and returns any attention in abundant milk and valuable hair.

Bees.

The honey now made in Nova Scotia is not beyond the demand of the local markets, but there is no reason why the abundant native flora, fireweed, clover, etc., to say nothing of sown crops such as buckwheat and the blossoms of all varieties of fruit, should not produce a yield for export to the unlimited market outside. The advice of the Government specialist can be had for the asking. In parts of the Annapolis valley and in Cumberland county beekeeping is already an industry; it requires little capital, and should prove in Nova Scotia as profitable as it now is in Quebec. The yield of surplus honey in six years from the Nappan Experimental Station was exceeded only by that from Ottawa.

ESTIMATED NUMBER OF LIVE STOCK.

Horses	70,101
Milch cattle	159,985
Other cattle (including calves)	246,829
Sheep	270,240
Swine	68,230
Hens	850,552
Turkeys	15,000
Geese	18,677
Ducks	11,236

CEREALS.

The Dominion Minister of Agriculture stated in the House of Commons on March 27, 1918, that Nova Scotia was going to produce enough wheat and coarse grain to supply its demand, whereas every other year it had imported. The 1918 report of the Nova Scotia Secretary for Agriculture stated that the wheat area had doubled since the outbreak of the war, and that the oat acreage for 1918 showed an increase of 15 per cent over that of 1917. The report for 1919 shows a further increase in the acreage of wheat, oats and hay.

To stimulate wheat-growing in promising sections, the Government has aided in the erection of new roller-process mills at Inverness (Inverness county), Boylston (Guysboro), Bridgewater (Lunenburg), Gore (Hants), Baddeck (Victoria), Berwick (Kings), Truro, Belmont and New Annan (Colchester), and Sydney (Cape Breton).

The following table has been supplied by the Nova Scotia Secretary for Agriculture, and shows the acreage under cultivation and pasturage, and the estimated yield per acre of cereals, hay, roots and fruits for 1919.

AGRICULTURAL yields in 1919. (Estimates of Secretary for Agriculture, N.S.)

Crops.	Acres.	Bushels per acre.	Total yieeld.
			Bush.
Wheat	31,546	19·2	605,610
Oats	150,010	37·5	5,633,078
Barley	11,479	27·2	312,096
Rye	516	25·0	12,900
Buckwheat	18,746	22·7	413,694
Peas	1,782	17·9	33,181
Beans	7,321	12·8	94,095
Mixed grains	5,047	32·0	173,024
Potatoes	50,724	149·9	8,561,798
Turnips	18,521	537·7	9,996,257
Mangels	2,196	500·8	1,099,935
		Tons.	Tons.
Fodder corn	4,565	9·4	45,104
Other fodder crops	3,357	9·5	32,134
Hay	685,915	1·85	1,279,836·0
Pasture	1,021,848		
Small fruits	9,724		
Apples	.....	.....	1,500,000 bbls.
Total acreage (exclusive of apples)	.....	.....	2,023,633 acres.

Flax.

The climatic conditions needful for the growing of flax are a long and moderately warm growing season that is not liable to drought and where there is a considerable amount of moisture in the air. The parts of the Dominion most nearly fitting these needs are British Columbia, Southwestern Ontario, the parts of Quebec lying near the St. Lawrence and the Maritime Provinces generally. Any soil that will produce a good crop of oats will be suitable. An acre of flax should produce nine bushels of seed and two tons of straw. The growing of flax requires much hand labour and not more than one or two acres are recommended at first. Everything except the "scutching" can be done on the farm. The Dominion Department of Agriculture has, however, lately evolved a machine to "pull" 4 to 6 acres of flax per day and is also testing an Irish machine for 'scutching.' It is also investigating processes of 'retting' by water under Canadian conditions.

Before the war such flax as was grown in Canada was used for linseed only, but the extraordinary demand for linen has made the fibre more important. Whereas in Ontario the flax area was 4,000 acres, it is now about 20000, and both in Ontario and in Quebec mills are installed which provide linen for domestic use, and ultimately for export. The industry is encouraged by a protective duty of 20 to 35 per cent and in September, 1918, a bounty on linen yarns made in Canada was granted by an Order in Council.

At the Central Farm in Ottawa a complete flax mill on a small scale is used for practical experiments, and investigation of flax growth is determining the areas most suitable. Parts of Nova Scotia will be found among these.

In 1766, Lieut.-Gov. Franklin stirred the jealousy of British manufacturers by telling Lord Shelburne that "the townships of Truro, Onslow and Londonderry, consisting in the whole of 694 men, women, and children, composed of people chiefly from the north of Ireland, make all their linen and even some little to spare to the neighbouring towns. This year they raised 7,524 pounds of flax which will probably be worked up in their several families during the war."

ILLUSTRATION FARMS.

The Committee on Lands of the Commission of Conservation in 1911-12 examined 885 farms in the five eastern provinces and inquired into the method of management, rotation of crops, selection of seed grain, care and use of manure, labour, weeds, etc. These farms were in groups of thirty, representing districts of each province. From each of these groups a farm was chosen by the farmers of the neighbourhood to serve as an Illustration Farm. The selected farmer received no special benefit beyond the advice of the Dominion expert and the free trial of new seeds and manures, and he of course retained full control, being free to adopt suggested methods of management or not. It was assumed that new methods when proved beneficial would be adopted by neighbouring farmers.

Such a farm is to be found in each of four divisions of Nova Scotia.

In Annapolis county, at Central Clarence (Mr. Vernon B. Leonard).

In Antigonish county, at Antigonish (Messrs, F. G. & F. W. Taylor).

In Inverness county, at Port Hood (Mr. Scott McDonnell).

In Pictou county, at River John (Mr. H. M. Tattrie).

At the end of three years (1915) the results of this system of co-operation between the Agricultural Department and the farmer were recorded. The farms in Nova Scotia reported an increase of crop yield varying from 20 to 25 per cent.

The existence of these Illustration Farms must be of great value to Boards of Settlement, and anybody intending to farm in Nova Scotia would do well to get into touch with the owners.

(*Vide* Report to the Commission of Conservation by Dr. James W. Robertson C.M.G., LL.D., 1915.)

Federal appropriation.

Under the Agricultural Instruction Act of 1913 the province of Nova Scotia until 1923 receives about $80,000 from the Dominion Government, a part of which is applied as follows:—

Dairying	$ 3,500
Poultry	1,500
Bee-keeping	1,500
Fruitgrowing	2,000
Eradication of insect pests	10,000
Demonstration of fertilizers and field crops	2,500

The balance of the fund is spent mainly in allowances to colleges and schools of agriculture and in salaries of instructors in agricultural industries.

FRUIT FARMING.

The Apple.

Apple orchards in Nova Scotia are what orange and lemon groves are in California—a staple industry known far and wide and a lodestone to attract desirable settlers. At present the Annapolis valley and the Cornwallis valley, an extension of this, are considered the most suitable region for apple growing, but the Provincial Government has set out thirty-five model orchards in various spots and have shown by practical experiment that other parts of the province, notably Antigonish and Hants, Pictou and Cumberland counties, are likely to claim attention. The danger in certain districts lies in late spring frosts and in unusually severe winters.

The United Fruit Company of Nova Scotia embraces forty Co-operative Fruit Companies and does most necessary work in marketing and regulating shipments, and in buying fertilizer and implements wholesale. The marketing, packing and grading of apples is regulated by Act 8–9 George V. In 1914 one cent a pound covered every expense after picking to delivery at the London docks.

The French introduced the apple in 1633. From 20,000 barrels in 1880 the pack has increased to about 1,500,000 barrels. As the citrus fruit industry in Florida or California grows and grows in spite of an occasional year of killing frost, Nova Scotia can well afford on rare occasions to lose a percentage of its crop as in the windstorm of August 10, 1917. The record year was 1911 when 1,734,000 barrels were packed and sold from the Annapolis Valley and neighbourhood alone. In "off years" the pack may fall to one-half of the above figure.

APPLE BLOSSOM TIME.

The principal market is Great Britain, but South Africa took 10,000 barrels in 1914, and a South American market is claiming attention.

Owing to the war-embargo on barrel shipment of apples in 1917 the growers lost the benefit of their usual European market, but, as the Ontario crop was short the Nova Scotian fruit was used to supply the deficit, and the evaporated apple industry was stimulated.

Nova Scotia as a province has won the gold medal of the Royal Horticultural Society for apples in competition with other parts of the Empire, while individual exhibitors at the same time took fourteen medals.

The Annapolis valley—"The Garden of Nova Scotia"—stretches for seventy miles from the head of Annapolis basin to the bay of Minas with a varying width of from 10 to 15 miles. The North Mountain lying along the Bay of Fundy from Cape Blomidon southwest to Brier island forms a barrier that shelters it from the Northwest winds and fogs, and parallel to this is the South Mountain on the other side of the valley. Of the enclosed valley area only about one-tenth is under cultivation. The price of land varies from $60 per acre to $200 for a six year-old orchard and $1,000 for one in full bearing. As in other parts first settled by the French, the farms are usually in narrow strips of from 20 to 120 acres, having meadow hay land in the bottom, orchard land midway, pasture and wood above.

A full-bearing orchard of ten acres should provide ample work for a settler and a fair living, but adjoining land for mixed farming is a comforting possession in an "off year." Even in the special fruit-growing areas mixed farming is recommended as an adjunct to the orchard, for, though it is possible to maintain fertility by the ploughing under of green crops and by commercial fertilizers, real stability is best obtained by catch crops such as potatoes, beans, roots or flax. Farmers with the live stock necessary to keep the land in good shape for such crops weather best a lean fruit year and have, to boot, the more fertile soil.

Details of the fruit industry and of land available or for sale may be obtained from the secretaries of the Board of Trade at various centres in the valley, such as Annapolis Royal, Middleton, Kentville, and Canning.

Other Fruits and Berries.

STRAWBERRY PICKING.

Cherries or plums are also grown largely in this district, and profits of $200 to $300 an acre have been taken by the sale of strawberries and raspberries, which are shipped to the United States when their earlier supplies are over.

The fortunate possessor of a cranberry bog can get a yield of from 50 to 60 barrels an acre, and sell them for $5 to $10 a barrel to satisfy the appetite at the Thanksgiving and Christmas seasons.

Evaporated Fruits and Vegetables.

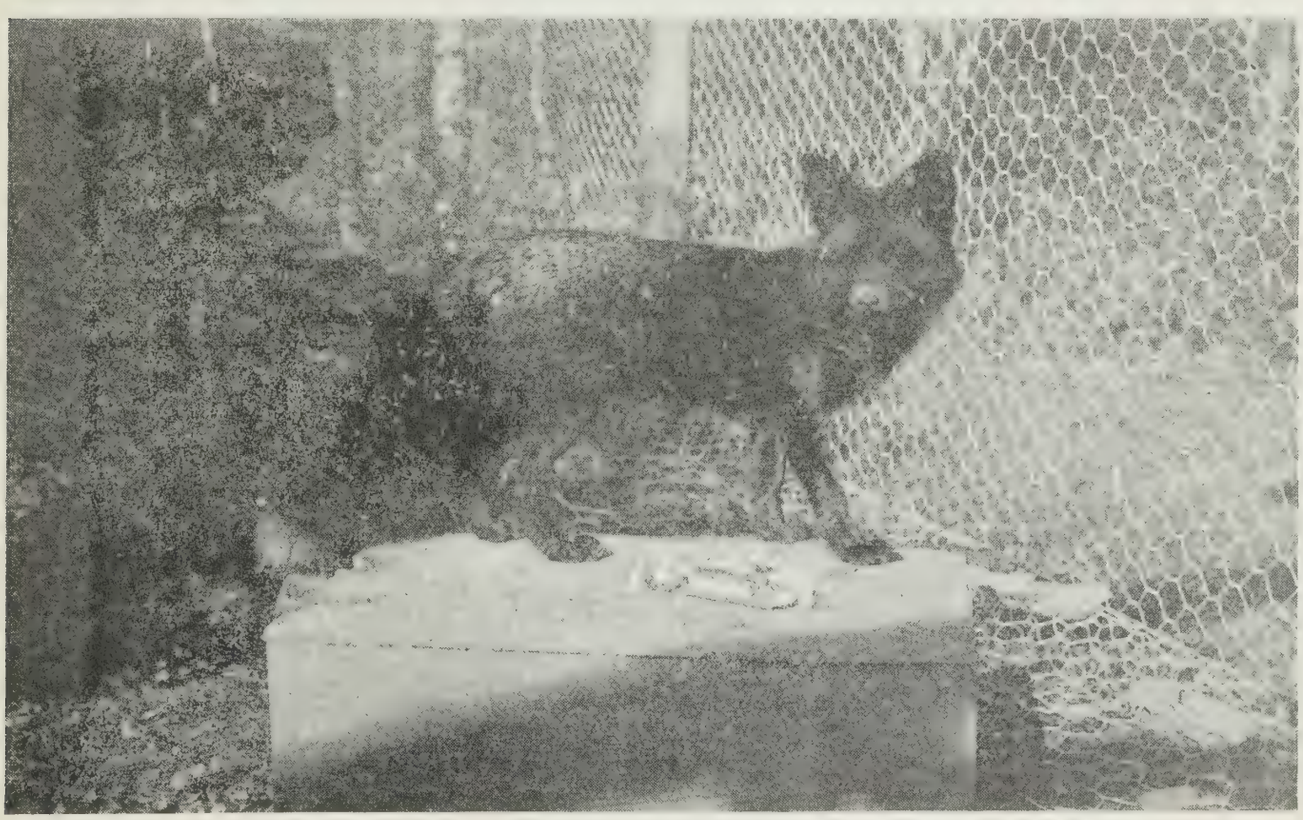
Dehydration has made an immense advance since it became a question of feeding armies. Potatoes and onions have been dried by the million tons and apples in proportion. Nowhere in Canada can fruit be properly sun-dried and so far the apple is the only fruit that has been artificially dried on any large scale. Considering the lightness for transport of dried fruit and vegetables as compared with the natural or canned article and the immunity from all danger of ptomaine poisoning it may be taken as certain that the evaporating process, which is neither difficult nor costly, will develop rapidly and be extended more widely to all kinds of fruit and vegetables, pears, peaches, berries, corn, peas, beans, turnips, carrots, spinach etc., and will be a means of saving the enormous mass of ripe fruit and vegetables now totally lost.

An Act of Parliament and an Order in Council of March, 1916, ensure proper inspection and standardization, so that home and foreign buyers can now buy with confidence.

(Bulletin No. 24 on "Evaporated Apples" issued by the Department of Agriculture contains plans and illustrations of the plant and machinery used in the industry.)

FUR-FARMING.

Though it may be undesirable that the zeal for fur-farming should "somewhere in Canada" rival a craze for "black tulips" or "Belgian hares," yet the industry is well worth consideration in a province such as Nova Scotia, with



A 'SILVER' FOX.

plenty of suitable land and the right climate. The world market demand for fur increases yearly, and, as the limits of the fur-bearing regions narrow, will have to be more and more supplied from domesticated breeds. The price of $2,900 for a silver fox pelt or $35,000 for a breeding pair may not recur, but, seeing that North America produces about one-quarter of the one hundred million dollars-worth of the worlds' marketed supply, Nova Scotia may well look for a share in the industry.

So far about 250 fur-farmers have taken out Nova Scotia Government permits and 14 companies have been capitalized at eight and one half million dollars.

The conditions needed for a successful fox-ranch are humidity, a sheltered area, a woodland of birch, spruce, fir and cedar, a ground covering of heath and shrubs like the blueberry, a climate cool in summer, but cold enough in winter to produce heavy fur and over-hair, and a soil with hard pan to prevent burrowing. Such conditions are common in Nova Scotia. Nova Scotia is also well within the natural range of the North American raccoon, which hibernates and is comparatively tame. The yearly production of American raccoon pelts is about 600,000, the auction price (Oct., 1919) reaching $16.50.

The family which comprises mink, marten, fisher, otter and skunk (easily de-scented) is a present subject of United States Government experiment. In Canada alone there are fifty mink ranches. Especially suitable to Nova Scotia and its sheep districts, though the stock is hard to obtain, is the Karakul sheep, which supplies the fur market with "Persian lamb" or "Astrakhan." This was the first animal bred for fur. Though the export of Karakul is now forbidden from Russia or Bokhara, or was in the times of Czardom, the strain in North America is still kept up from stock imported to Texas in 1908 and 1912. It has been found that the crossing of the Karakul with the coarser-haired breeds of sheep such as Lincolns and Cotswolds produces a lamb fur of desirable quality.

No fur-farming is allowed except under a permit from the Provincial Department in charge of game.

KARAKUL SHEEP.

WEALTH PRODUCTION OF NOVA SCOTIA.

ESTIMATED RETURNS FOR 1919.

Coal	$ 25,000,000
Coke and by-products	5,771,000
Gold and other minerals	316,000
Gypsum, limestone, etc	938,000
Building materials and clay products	1,888,300
Iron and steel products	19,000,000
Fisheries	14,350,000
Manufactures, ships and freights	56,260,000
Products of the farm	51,034,000
Products of the forest	16,965,000
Game and furs	675,000
Grand total	$192,197,300

SETTLERS AND THE LAND.

"When the men now serving in the Imperial Forces," wrote the Agent General for Nova Scotia, "return to civil life, a large number will not care to resume their pre-war occupations, but will cast about for some of our oversea lands wherein they can follow callings offering a freer existence, more congenial surroundings and wider scope for their natural abilities—To my mind it would be difficult to find a more promising class of settler. I am not, of course, referring to our own men when returning home, who will of course be looked after by a grateful province but to the available Briton ripe for emigration."

Further, there are in Great Britain many people with independent means of from $2,500 to $5,000 a year, whose income has been seriously curtailed by a 30 per cent minimum taxation and by a rise of 100 per cent in the cost of living. For them it must be harder than ever to bring up a family. Good education at low cost may be within easier reach than before, but the openings in a crowded

A DIGBY HOME.

community grow fewer. Many such men are sure to emigrate to the division of the Empire that offers suitable inducements. This class of settler generally purchases a property, often a fruit farm, and employs labour to help him in developing it. To these the country life of Nova Scotia offering full play to rod and gun makes a special appeal.

Under the Act of 1912 the Nova Scotia Government may buy land, subdivide it, erect buildings, fence and prepare the land and sell to farmers in parcels.

By an arrangement with loan companies, money is advanced to the settler under a government guarantee. Where the loan company will agree to advance 40 per cent of the appraised value of the property, to an applicant wishing to buy or improve the Government will, in approved cases, advance a further 40 per cent. The applicant must possess cash to the value of 20 per cent of the appraised value of the farm in addition to what he would require for house furnishing, stock, implements and family maintenance. Repayment is made by instalments on capital besides the interest, but these instalments may in certain cases be postponed for the first five years. (Application should be made to the Secretary for Industries and Immigration, Halifax, Nova Scotia.)

Both Dominion and Provincial Governments do much to aid the settler by the Agricultural Experiment stations at Nappan, Kentville and elsewhere, by the Entomological Laboratory at Bridgetown, by Model Orchards and Illustration Farms, by freight arrangements, by wholesale purchase of stock, fertilizers, seed and tractors and by publications and free advice.

Of about 900,000 acres of Crown lands still ungranted or unleased, parcels up to 150 acres may be granted to those over 18 years of age at $1 per acre added to the cost of survey.

The Soldier Settlement Board.

The purpose of this Board is to settle on the land those duly qualified whose interests will be served by farming, and that only on such agricultural land near an existing railway as can be made a productive holding for a home.

The Board exercises its powers under the "Soldier Settlement Act" of July 7, 1919. The following regulations are now in force:—

1. Loans are made by the Board
   - (*a*) up to $4,500 for purchase of land (Soldiers of the C.E.F. pay10% of the purchase price in cash)
   - (*b*) up to $1,000 for permanent improvements
   - (*c*) up to $2,000 for livestock and equipment

   (Imperial soldiers pay 20% of the value in cash.)

Note.—Repayment of loans for purchase of improved lands and permanent improvements begin one year from date of sale and can extend for 25 years with interest at 5% on unpaid balance. In the case of unimproved land the first instalment is payable two years from date of sale. Loans on live stock and equipment are repayable in 6 equal annual instalments.

All expenditure of loans is under the direct supervision of the Board.

Eligible applicants.

(*a*) Discharged veterans of the Canadian, Imperial or self governing Dominions' forces who served out of the country of enlistment.

(*b*) Members of any allied force who were resident in Canada before the war.

(*c*) Members of the Canadian Expeditionary Force who though not having served overseas are receiving pensions for injuries incurred during service in Canada.

(*d*) Widows of such men of the above classes who served in a theatre of war and who were resident in Canada before the war.

(*e*) Nursing sisters who served in a theatre of war and were previously resident in Canada.

An approved applicant receives (*a*) a qualification certificate if considered immediately competent to farm or (*b*) training for a time at a training centre or with a successful farmer. Allowances may be made towards the cost of subsistence of soldier settlers' families during the period of training, and provision is also made for the training in home economics of the wives and female dependents of settlers.

Imperial soldiers are required to pass a preliminary test in England and to spend from one to two years on Canadian farms before becoming eligible for loans. They are also required to deposit £200 with the Board as a guarantee.

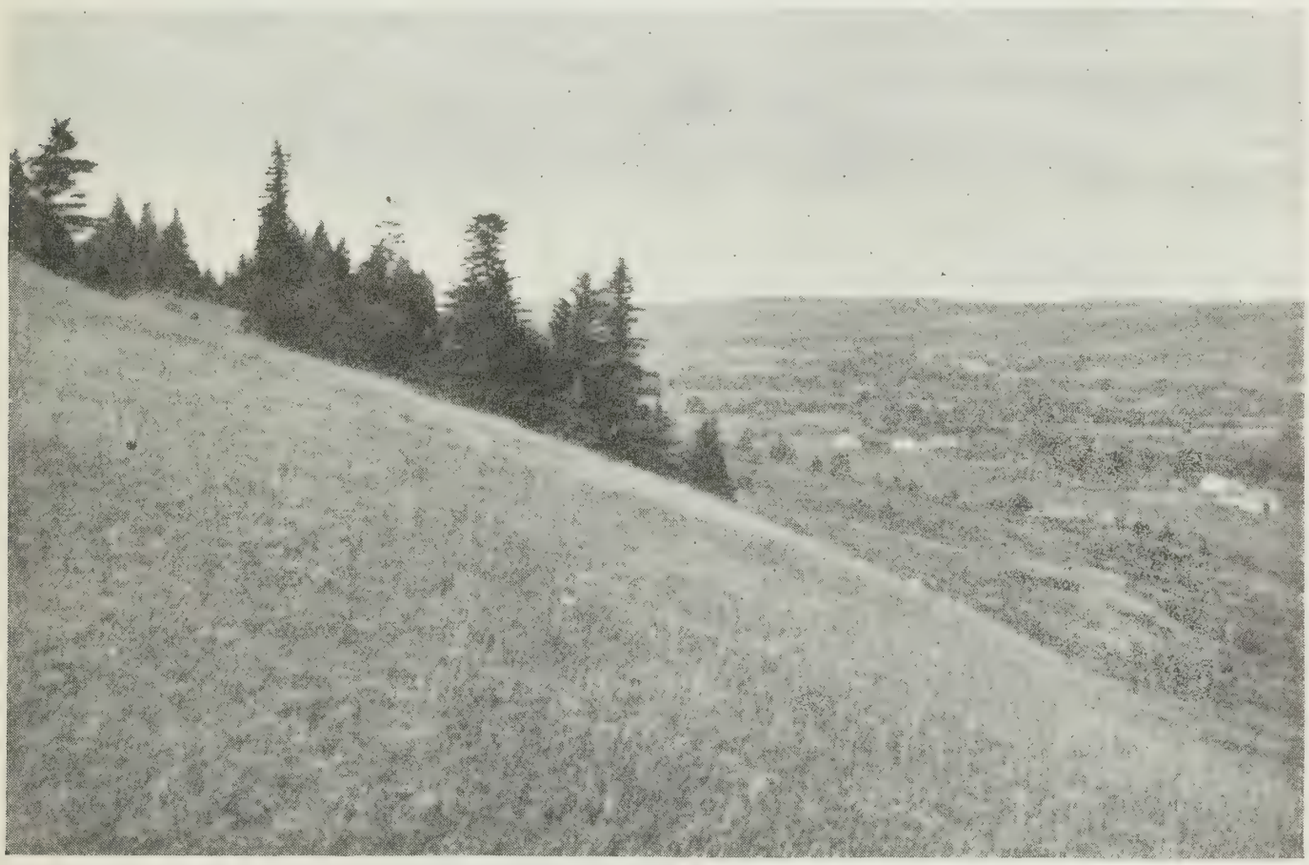
The Board is empowered to purchase livestock, building material, agricultural implements, etc., for re-sale to the settler at cost.

All land, stock, and equipment held and not paid for in full by the settler to the Board is exempt from attachment. Sales of these cannot be made without consent of the Board.

The acceptance of any fee or commission on any sale to the board or a false statement in the required affidavits can be punished by a $5,000 fine or five years' imprisonment.

It is important to realize that an eligible applicant can under prescribed conditions avail himself or herself of Dominion loans to the amount of $7,500 at 5% for the purchase and improvement of any suitable farm or farming land that may be for sale anywhere in Canada.

Up to February 21, 1920, returned soldiers to the number of 316 had been settled in Nova Scotia, and loans had been granted to the amount of $967,771.



GASPEREAU VALLEY.

The Nova Scotia office of the Soldier Settlement Board of Canada is at No. 529 Barrington Street, Halifax, where full information can be obtained from the officer in charge.

The Nova Scotia Returned Soldier Commission.

This commission, as in all the other provinces, is a sub-committee of the Department of Soldiers' Civil Re-establishment, and is charged with the following duties:—

(*a*) To put returned soldiers in touch with the nearest labour bureau.

(*b*) To keep a record of all requiring employment.

(*c*)To deal with troubles and complaints.

(*d*) To act as advisor and friend.

(*e*) To organize committees and do other things as shall be necessary from time to time.

The labour bureaus, which fall under the Federal Department of Labour, are in Halifax, New Glasgow, Sydney and Amherst. The officials in charge are all returned soldiers. A quotation from the report of the commission will show the spirit in which the work is being done. "Everything that is done for returning soldiers and sailors must be based on a sympathetic understanding of their mental as well as their physical sufferings. If a man loses one job, another must be found and if necessary a third, a fourth, a fifth, and so on until the right and lasting connection is made and the worker is settled in his work, in his mind and in his outlook on life."

Demobilization has been the work of the Department of Militia and Defence. It is the task of the Department of Soldiers' Civil Re-establishment to reabsorb the soldier into civil life with the least possible disturbance of economic conditions.

Allowances to those receiving vocational training have been increased to $60 a month for single men up to $110 for a man with wife and children. Free medical attendance and surgical treatment for any ailment whatever, whether caused by war service or not, is now provided for all members of the fighting forces of Canada for a year after their discharge. To be entitled to vocational training a man must have incurred a disability in service through wounds or disease, or must have had some old disability aggravated by service.

Civil Re-establishment.

Early in the war more than 5,000 men from the mines of Nova Scotia enlisted. There were also the usual proportion of men from offices and factories, from the agricultural industry, and from the fishing villages. It is characteristic of Nova Scotians that they are handy men. The fishermen build their own boats and make their own nets and work small farms; farm labourers work in the bush in the winter. Thus the Nova Scotian has usually a general knowledge of tools and experience with raw materials. The problem of educating to a change of occupation made necessary by disablement is so far simplified.

Halifax, being the chief port of debarkation for the soldiers who return wounded from the front, is therefore a centre for a district office of the Department of Soldiers' Civil Re-establishment. Most valuable work has been done in Nova Scotia to assist disabled men to resume their independence as civilians. The headquarters of activity are at the Nova Scotia Technical College. In its several buildings there is an up-to-date equipment, and here are given the foundation or complete courses in machine-tool making and repairing, stationary-engine operation, automobile mechanics, shoe-repairing, woodworking, etc.

When a miner is disabled for active service, he is also as a rule disabled for the work of a mine; but re-education can enable a man of reliable character to obtain the certificate required by Government for many official positions at the mines, such as shot-firers, fire-bosses, etc. A school for this special training has been opened at Glace Bay. Badly disabled ex-miners are also assisted into jobs on the surface, such as those of gate-tenders, watchmen, relighters, or check weighmen. Other ex-miners are trained in the shops of the mining companies to become pattern-makers and pneumatic-tool or electrical machine repairers. The Nova Scotia and Dominion Steel companies have co-operated fully with the industrial training programme.

Owing to the amount of packing of fish and apples there is a demand for coopers, and men who have taken training in this semi-skilled work are able.to earn from $18 to $20 a week at the present time.

Cabinet making is still a manual art in Nova Scotia and rough carpenters unable to do strenuous work are being trained as skilled cabinet-makers.

Vocational training is now offered at:—

Nova Scotia Agricultural College, Truro.
Acadian Business College.
Acadian University.
Business College, Truro.
General School, Glace Bay.
County Academy, Halifax.
Dalhousie University, "
Dominion Navigation School, Halifax.
King's College, Windsor.
Maritime Business College, Halifax.
Maritime Business College, New Glasgow.
Maritime College, Halifax.

Governmental:
Nova Scotia Technical College, Halifax.
Camp Hill Marine Hospital, Halifax.
Nova Scotia Sanatorium, Kentville.

There are also more than 50 independent firms with whom soldiers are getting industrial training, with Government co-operation. Full information can be obtained from the Returned Soldiers' Commission, Halifax, N.S.

TOWN PLANNING.

The laying out of Sydney by the Royal Engineers in 1784 was probably the first case of town planning by the British in Canada.

The Town Planning Acts of the Nova Scotia Government (1915) make suitable provision for all future urban and rural development in the province.

Under these Acts every local authority shall create a local board consisting of a mayor or warden and two other ex-officio members of the council, and not less than two ratepayers to be appointed by the local authority for a term of three years. This board shall appoint its executive engineer, who, with the board, shall be responsible for carrying out the provisions of the Act. All matters relating to town planning procedure shall be submitted to the Commissioner of Public Works and Mines.

The board must prepare a town planning scheme for lands within its area. or else a set of town planning by-laws.

The Acts provide for compensation but also provide that the local board can claim half of any increased value which is given to the property by the making or alteration of the scheme.

The planning proposed is largely of undeveloped areas, and, so far as relating to areas already built upon, it seeks to regulate voluntary reconstruction by the owner rather than make reconstruction necessary at the public expense. The essential object of the Acts is that the area shall be planned in advance of construction so that any development may work out in harmony with a well thought out scheme.

Halifax.

The reconstruction of a "Greater Halifax" will result from the joint work of three or four authorities:—

(*a*) The Halifax Relief Commission, which deals with the devastated area (325 acres)

(*b*) The Town Planning Board of the City, dealing with the remainder of the city area proper (2,960 acres).

(*c*) The Halifax County Council, dealing with the four acres that adjoin the city, Bedford basin and the wider entrance to the harbour (18,138 acres).

(*d*) The town of Dartmouth, lying opposite the devastated area, and whose co-operation in the general plan is expected.

While it would be Utopian and, indeed, out of the question to treat the areas as Napoleon III did Paris and sacrifice many old-established lines and vested interests in the planning of a city that might be the admiration of the world, yet such requirements as are demanded for the use, convenience, health and well-being of its inhabitants usually result in a city worthy of note, and in the case of Halifax will, it is to be hoped, produce a city worthy of its wonderful site, its historical tradition, and its commercial and Imperial importance.

When the general plan of the main thoroughfares, the spaces to be left open and such basic points are settled, an Act of the Provincial Parliament will provide that plans for future subdivisions shall be approved only if they fall in with the general scheme.

The rectangular scheme will be modified to avoid too steep grades, waste of land, and right-angled collision points with the main arteries; also the cut-and-dried rule that all streets are to be of a certain width regardless of traffic needs and density of inhabitants will be discarded.

The moderate amount of money available will not allow of expenditure on things purely ornamental, but the imagination and scientific knowledge of experts will work on plans that can be carried out.

The reconstruction of Halifax has become an immediate need since the catastrophe of 1917, but there are other places whose growth in the near future should not be disregarded. Such are the mining centres of Cape Breton and Pictou county. In New Glasgow, for instance, the great industrial development even of the last few years has created an urgent need for a town planning scheme which will bring the social and housing conditions abreast of the time.

"The opportunities to-day are too numerous and transportation too easy for labour to stay in any one spot under discouraging circumstances of undesirable surroundings." Speculation in corner lots and subdivisions has done all it can, not only to spoil the development of towns on the right lines, but to lead to economic stress. Up-to-date communities may sooner than is thought make it illegal for

any person to acquire a title to land except for use, and the next step would be to notify existing owners of idle lands to sell such lands within a period of years or to show cause why they should not themselves put it to economic use.

The municipalities of the Nova Scotia coal mining districts with fuel and power in their midst have such opportunities for modern communal development that there should be no need for the planning of separate towns for workers such as those of the Steel Corporations at Gary, Indiana, and Ojibway, Ontario, or that of the Riordon Pulp and Paper Company at Kipawa, Quebec. The Dominion Coal Company alone in 1914 were housing 15,000 people, renting 2,400 five-room houses with garden lots to most of its workers at $4 to $8 a month, and managing 220 boarding houses and nine hotels to meet the needs of others.

WATER POWERS.

While Nova Scotia is a province of low altitudes (Ingonish mountain, in Victoria county, 1,392 feet, being the highest) and has no big rivers or great fresh-water lakes, yet investigations to date have indicated that about 100,000 average continuous horse-power is available and there are many other power sites that still remain to be investigated.

The larger sites in use, mainly for pulp-mills, at the present time lie in the southwest end of the province, viz.:—

Site.	H.P. developed.
Mersey or Liverpool river (Rapid and Cowie Falls)	5,590
Medway river (Charleston and Harmony Mills)	4,050
Sissiboo river (Weymouth Falls)	3,000
La Have river, Morgan's Falls	2,150
Clyde river (Port Clyde)	1,800

In all, 26,024 horse-power has so far been utilized. Large undeveloped water powers exist on the Mersey (Liverpool), Gaspereau, Sheet Harbour and other rivers in the province. That from Indian lake and North-east river will supply the needs of the Indian river project under development above St. Margaret's bay.

There are hundreds of smaller water-powers, ranging from 5 horse-power to 1,000 horse-power in use for saw-mills, woollen mills, lighting plants and mining. At Isaac Harbour the gold mining stamp mills have been thus operated.

The municipalities of Annapolis Royal, Bridgewater, Liverpool, Middleton, Mahone and Shelburne own their light and power plants.

For the development of water-power in small amounts but widely distributed Nova Scotia is specially favoured. The rainfall is abundant and keeps the hundred or more small rivers well supplied in the open season, while the large number of small lakes, in many cases linked by rivers, offers excellent storage facilities. Several of the good sites have the advantage of being close to tide-water, for many of the rivers terminate in arms of the sea and are thus navigable for from 2 to 20 miles inland.

The Nova Scotia Water Power Commission, in co-operation with the Dominion Water Power Branch, is systematically investigating the water resources of the province and laying the ground for legislation useful to economic development, and is always ready to advise on hydro-electric propositions.

RAILWAYS.

No spot in Nova Scotia being more than thirty miles from one of a hundred arms of the sea, railroad construction, towards which the Provincial Government offers a subsidy, is not pressing. Thepresent mileage is 1,434.

The trunk line is the Canadian National Railway, owned and operated by the Dominion, with about 600 miles in the province. Halifax, the terminus, is 836 miles from Montreal. The eastward branch from Truro serves the mining and industrial regions of New Glasgow and Sydney, the trains being ferried across the gulf of Canso at Mulgrave, where much of the fish is shipped in refrigerator cars for the western market.

Subsidiary to this division are various coal lines. The Dominion Coal Company ships in winter to the open harbour of Louisburg by its own line from Sydney. The Inverness Railroad and Coal Company starting from Broad Cove, on the gulf of St. Lawrence, follows the coast line past Port Hood and connects with the main line at Hawkesbury. The southern entrance of the Bras d'Or lakes at St. Peter connects with the Canso ferry by the Cape Breton railroad. From Halifax an eastward extension of the Canadian National Railway system opens up the Musquodoboit valley.

The western part of the peninsula is served by the Halifax and South Western branch of the Canadian National Railways (389 miles) and by the Dominion Atlantic (300 miles). The latter is controlled by the Canadian Pacific, which thus has an independent line from Truro to a point, Windsor Junction, 21 miles from Halifax. The other arm of the Dominion Atlantic extends through the Annapolis valley and Digby to Yarmouth.

From Yarmouth, the point of arrival of fast steamers from Boston (235 miles) the Halifax and Southwestern (C.N.R.) runs to Halifax. From Bridgewater in Lunenburg county a branch strikes across to Middleton in the Annapolis valley. Here it crosses the Dominion Atlantic and runs parallel with it to Victoria Beach on Digby Gut.

It is to be noticed that while there are three great lines connecting Middle and Western Canada with Moncton and St. John, from Moncton to Halifax there is only one line for the 186 miles, of which only 21 miles is double-tracked. This bottle-neck condition is being improved by additional double-tracking to meet the leaping and bounding needs of the ocean terminals and the long "Atlantic wharf," as Nova Scotia is called. Nova Scotia has the natural and, in winter, the necessary ports to serve it. Eastern Nova Scotia, again, having the only coal-field east of the prairies, must become a Canadian Newcastle or Pittsburg.

LOCAL STEAMSHIP SERVICES.

The Nova Scotia coast, the Bras d'Or lakes and the arms of the sea are served by twenty-seven steamship companies, thus bringing every place of any size on the shore in communication with such distributing centres as Halifax and Sydney. There are eight local services from Halifax east and west; the French Mail steamer runs fortnightly between Halifax and the St. Pierre and Miquelon islands, calling at North Sydney.

The Minas and Cumberland Basins and St. Mary's Bay have steamship connections with St. John, N. B.; the Canadian Pacific Railway runs a daily boat between Digby and St. John. Newfoundland is linked with Halifax by the Farquhar steamers, which calling at many points make an outward trip of 596

miles as long as navigation lasts. A steamship service operated by the Reid-Newfoundland Company plies between Port-au-Basque, Nfld., and the Canadian National Railways terminus at North Sydney. From Pictou a steamer crosses to the Magdalen Islands, and another from Sydney to Summerside, Prince Edward Island.

Cable and Wireless Stations.

The Atlantic Cable stations are at Canso and Sydney. The Canadian Government Radio-Telegraph stations are these:—

Glace Bay (transatlantic only).
North Sydney.
Pictou.
Camperdown (Halifax).
Cape Sable.
Barrington.
Sable island.

A wave-counter or undagraph is maintained at Chebucto head, and a seismograph or earthquake recorder at Dalhousie university.

SHIPBUILDING.

Canadian shipbuilding dates from 1605 with the small vessels built at Port Royal (Annapolis) by Francois Gravé, Sieur de Pont, sailor from St. Malo. Seventy years later Intendant Talon's trading vessels are voyaging from Quebec to the West Indies and France—forerunners of those on the later triangular course—Canada to South America, Marseilles and return.

The year 1833 is the famous seamark when the *Royal William*, capacity 363 tons, left Pictou on August 29th, and reached London in twenty-five days—the first ship to cross the ocean under no power but steam. Though this ship was built in Quebec, it was to Nova Scotia in the persons of the three Cunard brothers that the vision came. Steam power, however, was as yet a baby. In 1850, Mackenzie, of Pictou, astonished Glasgow with the *Hamilton Campbell Kidston*, the biggest sailing ship the Clyde had ever seen. About 1864 Nova Scotia was launching 300 vessels, and by 1880 Eastern Canada building, sailing, owning and selling, had become one of the four greatest shipping districts of the world. For a period between these dates Canada headed the lists of tonnage in proportion to population.

It was not so much the use of steam that caused the decline as the change from wood to metal. Had Nova Scotia developed her metal industries a generation sooner, the 500 Canadian vessels built in 1875 would surely not have dwindled to 29 in 1900.

But the general substitution of steel for wood and big tonnage for small, the severe protective policy of the United States, and the free trade of Britain enabled the inherited experience of the Clyde and elsewhere to capture the market. Though there was a gradual recovery after 1902, it was not till the traffic and transport issues became acute in 1916 that production was speeded up.

In 1916 sixty wooden vessels representing 12,000 tons had been completed, and the war had stimulated the yards to such full and effective work that in 1917 20,000 tons were completed without any Government aid to the builders.

The Report of the Nova Scotia Ship-building Commission in February, 1918, shows that at that time 27,500 tons of wooden ships were on the stocks, exclusive of fishing schooners and one munition steamer. This fleet consisted of sixty-six schooners, ten of which were four-masters, and they were being built at no less than forty small yards nearly all round the coast. It was clear that wooden-ship building could be safely left to Nova Scotian enterprise unaided.

The case of steel ships was different. Here large plants and capital were needed. Though for many years plates of fair size had been rolled at New Glasgow, the difficulty lay in securing the heavier plates, which were now scarce because of the Old Country demand and the vast shipbuilding programme launched in the States. The Admiralty Controller advised that "it would be of great service if arrangements could be made whereby ships' plates could be rolled in Canada," but without Government aid and the assurance of a continued demand the diversion from established products and the building of a heavy plant was beyond the power of existing companies. Until arrangements could be made for mills to roll heavy plates in Canada, the Canadian Government used its good offices to secure a limited supply from the States.

With a view to making Canada independent of foreign or Imperial rolling mills an arrangement was made with the Dominion Iron and Steel Company, of Sydney, Nova Scotia, by which they undertook to build the first plant in Canada capable of producing heavy plates. This was made possible not by a direct government subsidy, but by an agreement to buy the product required at a certain price for a limited period.

Meanwhile the Imperial Munition Board issued contracts for steel and wooden ships to cost $64,500,000, of which Nova Scotia took $1,340,000. The

"THE WAR BEE."

Nova Scotia Steel and Coal Company completed three ships of 2,400 tons, *War Wasp* and *Watuka*, the first two, being taken over by the Munitions Board, and by order of the Marine Department two more of 2,800 tons, deadweight capacity, were in May, 1919, being built for West Indian trade.

At Halifax and Dartmouth a modern shipbuilding yard is now in working. The Halifax Ship-yards, Limited, took over the existing repair plant and dry-dock at Halifax and the Marine Railways at Dartmouth, and undertook to provide for the building of ships up to 12,000 tons' capacity. In May, 1919, two ships of 8,100 and two 10,500 tons were on the stocks.

For the next few years the work of ship repairing should be at high pressure. Already many of the freighters built on "rush" contracts are in need of a thorough overhaul and are waiting their turn for the very limited repairing accommodation now available both in Canada and the States. Shipbuilding is more important in peace than in war; indeed, it is only by activity in times of peace that ships and especially crews can be ready to hand in the day of stress. Had it not been for the mercantile marine and a myriad of trawlers and seamen, the allied armies could not have been massed nor the allied nations fed. The American Ambassador in Great Britain has said: "There is no more glorious page in the history of the war than that contributed by their bravery and self-sacrifice in the face of known and constant danger, all the more terrible because it could not be foreseen. They made it possible to transport the armies of Britain and the United States to France and to provision them when there. They kept the commerce of the allied world alive and brought, not alone munitions to the troops, but food and fuel to the people of the allied countries. They are the men who defied and defeated the base iniquity of the German submarine campaign, and it is not too much to say that without their brave devotion the war would not have been won:" and the Admiral in command of the United States fleet, publicly declared that "without the British merchant seamen our army and navy would have been helpless." The share of the Maritime Provinces in this noble service is fresh in memory.

Nova Scotia lying in the most favoured spot of the largest of the great fishing areas of the world has from the first had boats and crews. Her fleet of fishing schooners is perhaps complete; Lunenburg alone has 125; but to meet French enterprise on the Banks still more steam trawlers and fast fish-carriers from outside waters will be needed. The fishing fleet is the proper school for young sailors, and now that Canadian commerce is enlarging its own carrying trade there will be no need for them to sign under a foreign flag.

With cradles full of sailors, and craftsmen in every inlet, with the land on the edge of the sea packed with coal and with iron nearby, Nova Scotia could, herself, if called upon, build and man a mercantile marine and save the Dominion a yearly normal freight bill of fifty million dollars.

(NOTE.—All ships of iron and steel building in the province and all machinery used in building the same are exempt from provincial taxation.)

INDUSTRIES IN WORKING.

Of the 21,306 manufacturing establishments in Canada in 1915, Nova Scotia, ranking fourth among the provinces, was credited with 968, distributed among 86 industries. The capital invested was $126,539,183 and the employees were 33,581. The falling-off from the 1480 in 1910 was due to the inactivity in

he lumber trade and the closing of 568 saw mills, a state of things now greatly changed during the period of reconstruction. The Government of Great Britain alone expects to build 1,600,000 houses in the next ten years, the wood for which will have to be imported.

Of the Nova Scotia manufacturing plants, those with a product value exceeding a million dollars were these:—

	Value of Products.
Iron and steel products	$10,087,013
Railway cars and car works	6,457,279
Fish (preserved)	4,436,413
Logs, lumber products	3,418,921
Bread, biscuits, etc	2,670,459
House building	1,359,560
Electric light and power	1,192,825

(NOTE.—The iron and steel industry in the year 1915 owed an increase of more than five millions to the war, and car products more than a million.)

A study of the Postal Census of Manufactures (Ottawa, 1916) shows blanks in several industries that seem naturally adapted to the province.

Apart from the steel and iron manufactures centred in Cape Breton Island and Pictou county, where the proximity of iron and coal ensures a busy future, the chief industrial towns are Halifax (including Dartmouth), Truro and Amherst. In these centres the main industries are chocolate, biscuits and confectionery, office and other furniture, textiles and clothing, hats and caps, condensed milk, paint, railway cars, oil and sugar refining.

The physical position of Nova Scotia, generally, offers great inducements to the industrial investor; she has a certain amount of water-power, and abundance of coal; she has plenty of raw material of her own, and many fine harbours where that from foreign-countries, e.g., sugar-cane, cacao, tobacco or cotton, can be laid down cheaply, and from which a whole fleet of ships built in the province can sail abroad.

PROVINCIAL AND MUNICIPAL TAXATION.

There are thirty-eight towns and municipalities in Nova Scotia, not counting Halifax whose assessment records are out of the reckoning since the explosion.

The rate of municipal taxation per hundred dollars on real and personal property inclusive of school tax in the ten largest towns having an assessed value of real property exceeding a million dollars is as follows:—

Amherst	$ 2.80	Sydney Mines	$ 2.00
Dartmouth	1.95	Trenton	1.75
Glace Bay	3.33	Truro	2.60
New Glasgow	1.95	Windsor	2.00
North Sydney	2.90	Yarmouth	2.50

There is no provincial tax on industrial plants other than the fees imposed for registration of joint stock companies. For companies with capital up to $10,000 the fee is $30 with an additional dollar for every thousand up to $50,000, the fee diminishing as the capital amount increases.

The municipal taxation on industrial plants varies locally, some towns offering a bonus as an inducement to their establishment.

TRADES UNIONS.

In 1879 there was no regularly appointed Trades Unions in Nova Scotia. In 1917 there were 116, of which 71 were affiliated to international organizations, such as the American Federation of Labour.

The Provincial Miners' Union, which in 1882 changed its name to Provincial Workmen's Association, was probably the first Trades Union in Canada granting charters, and antedates both the "Knights of Labour" and the "United Mine Workers of America."

In time a rival union was formed under the title "United Mine Workers of Nova Scotia," and in October, 1917, the two bodies at the suggestion of a Royal Commission combined under the name "Amalgamated Mine Workers of Nova Scotia." This new body was subsequently affiliated to the Trades and Labour Congress of Canada, and at the close of 1917 had 25 branches and 9,200 members. In April, 1919, affiliation was on foot with the "United Mine Workers of America."

At a joint convention of miners and operators in the preceding February the principle of an eight-hour day was adopted.

Trades and Labor Councils,or bodies of delegates representing branch unions in a district, are designed to give expression to the opinions on certain public questions of the affiliated organizations. Affiliation is voluntary.

In Nova Scotia there are three such councils, viz:

Halifax District, in which 14 out of 15 unions are represented.

Pictou county, in which 12 out of 15 unions are represented.

Sydney county, in which 6 out of 15 unions are represented.

INDUSTRIAL DISPUTES.

Of the Dominion Government Act of 1907, entitled "*The Industrial Disputes Investigation Act*" the following are a few of the main provisions:—

In case of a prolonged dispute between an employer and any of his employees either party may make application for the appointment of a Board of Conciliation and Investigation. If the minister decides that the Act applies, within fifteen days such a board shall be established consisting of three members, one recommended by the employer, one by the employees, and the third by the two first conjointly. This third member shall be chairman. No member shall have a pecuniary interest in the issue of the dispute.

The Board or any member of it, or any other person with its written authorization, may at any time enter any building, mine, ship, factory, workshop, etc. concerned for the purpose of inspection, or for the interrogation of any persons on the premises.

No counsel or solicitor shall be entitled to be heard before the board.

Strikes, walkouts, or changes in the conditions of employment are illegal pending a reference to the Board. Either party to a dispute may agree in writing to be bound by the recommendation of the Board and if the other party agrees in like manner the recommendation of the Board shall be enforced. If a settlement is not arrived at, the Board shall make a full report to the minister of its findings and its recommendation. An amendment to the Act further provides that, where in any industry a strike or lockout has occurred and in the public

interest or for any other reason it seems to the minister expedient, he may, on the application of any municipality interested or of his own motion, constitute a Board of Conciliation to investigate with or without the application of either of the parties to the dispute or recommend to the Governor in Council the appointment of a commission to inquire into the dispute.

Their report shall be distributed to the newspapers and elsewhere in such manner as seems most desirable to secure a compliance with the recommendation of the board.

(It will be noted that as a final resort in case of dispute the case is referred to the bar of public opinion.)

(See Order in Council of July 12, 1918, providing for a Board of Appeal.)

Industrial Disputes Act, Nova Scotia, 1919.

The Provincial Act provides that the management shall receive and give a hearing to a committee of a trades union, the members of which need not be employees of the concern in question. Conversely the committee of the Union shall listen to the statements of the management. A refusal in the former case is penalized at $500 a day, in the latter at $100.

All female workers shall receive wages equal to those of men in similar classes of work. Penalties on the management for non-compliance are $100, $200, $300 for the first, second and third offence.

FOREIGN TRADE.

Halifax harbour.

There are on the map of the Western Hemisphere certain ports destined for world trade and growth by a combination of fine harbourage and geographical position. Your finger points at once to New York, New Orleans, Rio de Janeiro, San Francisco, Vancouver and Halifax.

Historically, Halifax has had her share of world history since Colonel Cornwallis on June 21, 1749, sailed into Chebucto Bay on the sloop *Sphinx* and penned the despatch; "Our officers agree that the harbour is the finest they have ever seen." Its part in the Seven Years' war, in the wars with Napoleon, and the war of 1812 as the British naval base in the North Atlantic is perhaps better known to most than its yet unwritten history in the great four and a quarter years' war now ended.

Commercially, however, Halifax had to be content with her position as a coaling base and port of call, or with spasmodic West Indian or Atlantic coast trade, or with that more regular local commerce on the St. Lawrence river and gulf, until transcontinental railroads linked her with the west.

But times have changed since the *Royal William* in 1831 paddle-wheeled between Quebec and Halifax and since thirty-five days was good time to Liverpool. With the change to boats out of sight of land for four days only, and a dozen steamship lines freighting to all ports, "sleepless" Halifax began to throw off all symptoms of drowsiness, and in 1912 the Government planned the new ocean port for the Canadian National Railways and the connecting transcontinental lines.

Halifax harbour is a masterpiece of nature. The coast from Labrador southwards sunk until the ocean filled the hollow valleys and left here an inland basin connecting by "The Narrows" with an outer bay. This bay forms the outside harbour, a mile square and 70 feet deep, siltless, free from troublesome currents and protected by islands at the mouth.

On the west side of this body of water the Government have secured 85 acres with a reserve of 115 to be obtained by reclamation. Here within the pierhead line 62 acres will be taken up by shipping, with twenty-seven berths for ships up to a limit of 700 feet, but prepared to accommodate ships of any size up to 1,200 feet. There is a depth of 45 feet at the piers at low water.

FOUNDATION OF HALIFAX OCEAN TERMINALS

The landing quays connect with a new union passenger station, and grain elevators and a conveyor system will meet all the needs of commerce. This great work known as "The Halifax Ocean Terminals" is not yet completed up to ultimate plans, but the units erected are in use every day. The expenditure up to March 31, 1919, has been nearly $15,000,000 and a further $8,000,000 has been voted by the House of Commons to complete the first unit, comprising nine steamship berths, train-shed, passenger and landing facilities, grain elevators, tracks and subways.

Doubtless, also, Halifax will retain her claim to have the lowest port charges on the Atlantic coast.

Comparative Table of Distances From Halifax and New York to Six Trade Centres.

To	Miles from Halifax.	Miles from New York.
Liverpool	2,450	3,100
Pernambuco	3,451	3,678
Rio de Janeiro	4,611	4,748
Montevideo	5,586	5,723
Buenos Aires	5,701	5,838
Cape Town	6,423	6,786

During the war 298,332 Canadian officers and men besides 50,000 Chinese embarked on ships sailing from Halifax. Overseas convoys also were assembled here transporting Australian, New Zealand and United States troops. It was a common occurrence to see from twenty to forty ships leave Halifax harbour in one convoy.

PASSENGER WAY. HALIFAX OCEAN TERMINALS.

SYDNEY HARBOURS.

A summary of the features of the Sydney harbours will show that for ten months of the year they have hardly a rival in the north Atlantic and being in the heart of the coal fields are destined in time to have a fuller share of Canadian trade. The drift-ice which blocks the entrance in certain winds is troublesome for two months only.

The entrance from the ocean is three miles wide, its length of five miles narrowing to one-half mile between two protecting bars, where the mean depth is 39 feet (l.w.s.t.). North Sydney harbour lies one-half mile within this narrower entrance. The channel to North Sydney is 36 feet deep and more than a mile wide, and from North Sydney to Sydney 40 to 45 feet deep and three-quarters of a mile wide. At Sydney piers the present depth of 30 feet on a mud bottom could be rapidly dredged to 40 feet if needed.

Sydney harbour could hold "all the shipping in the world," having an area of 15 square miles and a depth of a good forty feet; it has miles of good foreshore owing to the projection of the land, fog is almost unknown, and, being a natural harbour, there are at present no charges for maintenance. The pilotage charge for a 7,000 ton vessel is $80.

SYDNEY, C.B.

STEAMSHIP COMPANIES TRADING TO AND FROM DIFFERENT PORTS IN THE PROVINCE OF NOVA SCOTIA (as for February, 1920).

Destination.	Starting Point.	Ports of Call.	Companies.	Service.
Liverpool, London or Glasgow	Halifax		Canadian Govt. Merchant Marine.	Regular.
	St. John	Halifax	Canadian Pacific Ocean services.	"
	British port	"	White Star-Dominion.	
	"	"	Cunard.	
	"	"	Anchor-Donaldson.	
Liverpool or London	Halifax	St. Johns, Nfld	Furness Withy & Co	Regular.
Australia and New Zealand	London, England	Halifax (winter) Auckland, N.Z. Wellington, N.Z. Lyttleton, N.Z. Dunedin, N.Z. Melbourne, Aust. Sydney, Aust.	New Zealand Shipping Co	Monthly. (Outward service only.)
Buenos Aires	Halifax	Buenos Aires, Montevideo and other S. American ports.	Canadian Govt. Merchant Marine.	Regular.
West Indies and South America	St. John	Halifax	Can. Govt. Merchant Marine	Winter.
	Halifax	Bermuda West Indies. Georgetown.	Royal Mail Steam Packet Co. (Pickford & Black, Halifax Agents.)	Once in 14 days, alternate Fridays.
South Africa	Montreal St. John (winter)	Halifax. Capetown. Port Elizabeth. East London. Durban.	Elder Dempster & Co	Monthly.
Newfoundland	Sydney or Louisburg	Port aux Basques or Placentia	Reid Newfoundland Co	Daily in summer, (tri-weekly in winter).

Montreal	Montreal	Charlottetown, P.E.I. Sydney, C.B. St. Johns, Nfld.	Canada SS. Lines.	Summer service.
Liverpool	Sydney, C.B.		Can. Govt. Merchant Marine.	
Nova Scotia and Newfoundland	New York	Halifax St. Johns, N.F.	Red Cross Line	
Jamaica (Kingston)	Halifax	Santiago de Cuba Turk's Islands	Pickford & Black, Halifax.	
Havana, Cuba	Halifax	Havana	Can. Gov. Merchant Marine.	Regular.

NOTE.—The Report of the Dominions Royal Commission recommends the development of the route from the British Isles to New Zealand and Australia via Halifax, Bermuda, Jamaica, Panama Canal and Tahiti, calling special notice to the fact that to make Halifax the Canadian port of call would only add 400 knots to the direct trans-oceanic route to Colon.

Addendum on West Indian Trade.

An agreement was published on Aug. 3, 1920, between Canada and the British West Indies, but subject to the approval of the Canadian parliament, of the legislature of each of the colonies concerned and of the Secretary of State for the Colonies. The main points are these:—

1. As a general principle goods being the produce of any of the British West Indies are to be entitled to a preference not exceeding 50% of the duty imposed on similar goods imported into Canada from foreign countries.

Special duties are stated in the case of sugar, cocoa-beans, lime juice, arrowroot, grape fruit and rum. Limes. cocoanuts and onions are to be free.

2. Goods being the produce of Canada and imported into the British West Indies are also granted a preferential tariff varying among the different islands from 50%—90% of the duties imposed on similar goods imported from foreign countries. Special duties in the case of flour, spirits, wine and ale.

3. It is reciprocally provided that on six months' notice by either party the products of either may be entitled to preference only if conveyed by ship direct.

Steamship Services (Eastern Group)—

Within 3 years or earlier Canada will use her best endeavours to arrange a weekly service from Halifax or St. John calling outward bound at Bermuda, Barbados, Trinidad, B. Guiana and homeward at the same ports together with Grenada, St. Vincent, S. Lucia, Dominica, Montserrat, Antigua, Nevis and St. Kitts, and on alternate weeks reversing the order of call.

The vessels are to be from 5,000 to 6,000 tons gross, of 12-knot speed, with accommodation for 230 passengers.

Steps will also be taken to provide hotels, etc., in the colonies with a view to increased passenger traffic.

(Western Group).

Not later than Jan. 1, 1921, Canada will undertake to provide a fortnightly mail, passenger and freight service between Canada, the Bahamas, Jamaica and B. Honduras.

Steamers shall sail to Belize from such Canadian ports as conditions require, calling outwards and inwards at Nassau and at such ports in Jamaica as may be necessary.

Limited contributions on a varying scale from the colonial governments shall be recommended to their legislatures if the ship service proves unremunerative.

Ships are to be not less than 3,500 tons gross, 10-knot speed, with accommodation for 20-30 first-class passengers and cold storage plant if warranted by the trade.

THE BRITISH WEST INDIES AND BRITISH GUIANA.

The development of the present system of Preferential Trade with the West Indies and of the direct steamship service on which this trade relies concerns Nova Scotia perhaps more than any other province of the Dominion.

The present conditions of trade with the West Indies are these:—

1. Under the Trade Agreement of 1913 a Customs rebate of 20 per cent. on certain products is allowed, in addition to the $33\frac{1}{3}$ per cent allowed to imported products of the British Empire. Canadian products enjoy reciprocal advantages.

2. A subsidy is paid to the Royal Mail Steam Packet Company of $340,666 a year for a fortnightly service between Canada and the West Indies, the whole amount being paid by the Dominion Government. The Canadian goods exported by this line to the West Indies in six years amounted to $21,467,481. Passengers were also carried to the number of 23,635.

3. The West Indies already take 90 per cent of the Nova Scotian cured fish and there is a constant demand for such products as Nova Scotia does or could produce, viz., flour, butter, cheese, condensed milk, potatoes, apples, white pine and spruce, hardware, chairs, paper, sulphate of ammonia and bunker coal, machinery and many manufactures. Ships on their return should carry full cargoes of goods which Canada imports heavily and which the West Indies produce, viz., sugar, rice, bananas and oranges, lime-juice, cocoa, greenheart and logwood, cotton, asphalt, spices and rubber, or of goods which the West Indies could produce or do produce now in small amounts, viz., tea, tobacco, rum, coffee, sago, lemons, pineapples, diamonds, honey, oil.

Trade from Eastern Canada, if it were to follow the line of least resistance or cheapest freight rate could flow to the West Indies as readily as to the western provinces, for Toronto and Montreal could ship to Trinidad at less cost than to Winnipeg, and to Halifax or St. John at less than half the cost, the freight rate being about the same as to United States ports. Montreal is nearer to Trinidad than to Vancouver, and Halifax nearer to British Guiana than to Brandon

In time the western provinces may gain fuller access to the West Indies by the Panama canal, and a steamship service from Halifax to Vancouver would bring into closer communication with Canada those parts of the West Indies which have not so far benefited by the subsidised steamship services, viz.: The Bahamas, Jamaica and British Honduras. Nova Scotia products of all kinds having either no rail-haul to speak of or having cheap water delivery to Halifax would especially benefit by such extension of trade.

Nova Scotia is fortunate in having the West Indies and its multitude of magic isles within cheap and easy access. The palmy days of the sugar trade may return and enterprise find innumerable fields ranging from the staple products of the tropics to pearl-oyster beds, sponge gardens and turtle farms.

In times when conditions are elastic for a readjustment of trade relations and a re-grouping of the component parts of the Empire, it is well to remember that the West Indies with its first rate harbours in Antigua, S. Lucia and Grenada guard the route to Panama and South America, and form a natural bridge for the passing to and fro of Canadian commerce.

Even free trade with the West Indies need not disturb existing economical relations, for the products of Canada and of the West Indies are clearly divided, each producing what the other can not. With free trade, Canada would not need to pay a toll of $10,000,000 a year for produce obtained from the West Indies through the United States.

British Guiana —Valuable as is the trade with the West Indian region in general and capable as it is of indefinite development, special attention may be directed to British Guiana as the richest and perhaps the least known of any

tropical part of the Empire, whose trade may in time prove of particular importance to Canada.

The staple products of British Guiana are or will be rice, sugar, cotton and rubber. In 1917 the export trade to Canada amounted to $7,526,421 of which 99 per cent is credited to sugar. As long ago as 1913 there were seventeen and a half million pounds of rice exported generally and a much larger acreage was being planted. In the forests Para rubber trees are indigenous, and the soil, climate and rainfall are ideal for their growth.

The hardwood "greenheart" of British Guiana owing to its resistive power in submerged work has been used in the Suez and Manchester ship canals and in the making of the dykes of Holland.

In twenty-five years 2,287,234 ounces of gold have been mined and in 1913, 75,479 diamonds were exported.

There are at least 7,000,000 acres of lowlands, requiring drainage and dykes, but rich in potash and suitable for sugar, and besides these there are millions of acres of fertile land available for settlement.

A herd of 160 cattle brought from Brazil increased in twenty-six years to 10,000 in the great savannah region of 3,000,000 acres. These lands are suitable for cotton and tobacco.

The water-powers of the colony are abundant, but so little is known about them that the Imperial Committee could say nothing except that the "falls of Kaieteur" are said to form perhaps the finest untouched water-power of the Empire. They rival the falls of Niagara, Hamilton and the Zambesi.

SOUTH AFRICAN TRADE.

The Dominion Government pays a subsidy of $146,000 to the Elder-Dempster Company for a monthly service to South African ports. In 1918 Canadian goods were exported by this line to the value of $2,714,000. The total value of Canadian exports to South Africa has risen from $2,295,000 in 1911 to $11,000,000 in the first eleven months of the fiscal year ending March 31, 1919. Of this, $4,000,000 was carried by the subsidised service, the rest mainly by sailing ships.

CENTRAL AND SOUTH AMERICAN TRADE

Other than British Guiana.

Before the war broke out, the exports to the South American Republics from Canada showed a total for the year of more than five and a half million dollars, and the imports from the Republics to Canada three and one-third millions. Freight from eastern Canada is usually shipped via Boston, New York or even via Liverpool. The only South American Republic dealing directly with eastern Canada is Columbia, whose staple exports are gold, coffee, hides, bananas, and tobacco. The trade with British Honduras is carried on through United States steamship lines; schooners sail from Lunenburg to Porto Rico fortnightly; others sail from Halifax to Havana.

The supplement to the *Weekly Bulletin* published by the Department of Trade and Commerce in 1915 gives full information as to ocean transfer, credits, exports, competition, packing, languages, precautions and other facts without a knowledge of which no exporter is likely to succeed.

A Canadian Export Association has been formed with headquarters in Toronto. The Canadian Govt. Merchant Marine now operates a steamship service from Halifax to S, American ports.

CANADIAN BANKS IN THE WEST INDIES.

The Royal Bank of Canada has a branch in Jamaica and in most of the other West Indian islands, including twenty-seven in Cuba, three in Porto Rico, and five in the Dominican Republic. It also has branches in British Honduras, British Guiana, (three,) and Venezuela, (four).

The Bank of Nova Scotia has ten branches in Jamaica, one in Porto Rico, and one in Havana.

The Bank Directory of 1919 shows that these two Canadian Banks so far cover the field.

CANADIAN TRADE COMMISSIONERS.

The names and addresses of Commissioners located in the various countries of Europe and Asia and also at Rio de Janeiro, Buenos Aires, Auckland, Melbourne, Cape Town, Cuba and in the British West Indies are published regularly in the *Weekly Bulletin* of the Department of Trade and Commerce, Ottawa.

LIST OF PRODUCTS SHIPPED FROM NOVA SCOTIA PORTS.

The table below indicates the kind of goods shipped in recent years on steamers calling at Nova Scotian ports to various countries other than to the more general markets of Newfoundland and Great Britain.

It also shows what is shipped in exchange by the West Indies, and what exports at present seem monopolized by the United States of America.

To South Africa—
Automobiles, calcium carbide, cattle, cereal foods, flour, lumber, paper, wheat, woodware, furniture, binder twine, egg fillers, carriage ware, wax.

To Australia and New Zealand—
Automobiles, agricultural implements, calcium carbide, cattle, chair stock, cereal foods, clothes pins, corsets, fruit jars, hardware, iron pipe, sole leather, lumber, organs, paper, rubbers, seeds, steel rails, wire.

To West Indies and South America—
Apples, brooms and brushes, biscuits, butter, canned goods, chairs, cheese, cordage and rope, eggs, fish (cured), fertilizer, flour, seed, furniture, groceries, hay, laths, livestock, lumber, mineral water, meal, nails, oatmeal, oats, paper, potatoes, shingles, soap, stoves, sulphate of ammonia, tea, trunks, vegetables.

West Indian Exports carried on these ships—
Arrowroot, cassava, cocoa beans, cocoa-nuts, coffee, fancy woods, fustic (dyewood), honey, ginger, lime juice, molascuit, oranges, pimentos, rum and bay rum, tallow, tea, sponges, sugar, wax.

Goods shipped in these steamers solely by U.S. exporters—
Brown corn, coal bags, clay pigeons, corn sugar, corn syrup, dried fruit, doors, door handles, dressed poultry, hog hair, hops, earthenware, lard, lamp chimneys, maple flooring, mules, seeds, sewing machines, shoes, washing powder, wheel barrows, wood alcohol.

NOVA SCOTIA AND AERONAUTICS.

Early in the spring of 1918, in view of the submarine menace, rapidly increasing with the development of the Deutschland class of submarine, the Canadian Government, pursuant to the advice of the Admiralty, decided to organize an Air Service for coastal defence.

The Imperial Government was asked to assist and, on Dominion Day, Colonel Cull, D.S.O., R.A.F., and a small staff of officers arrived in Ottawa. Owing to the nature of the work to be carried out, the organization was placed under the Minister of Marine and Naval Service and was named the Royal Canadian Naval Air Service.

Sites for stations were chosen at Halifax and North Sydney without delay, and energetic steps taken for the construction of buildings, purchase of equipment and for the recruiting and training of personnel.

As there was no time to be lost, the assistance of the United States Government was invited and promptly given. The necessary personnel to man two stations and a large quantity of equipment were transferred from the United States Coastal Defence organization to Halifax and Sydney. On August 25th, 1918, flying was started at Halifax and very shortly afterwards at Sydney. This was a decided achievement, and was made possible only by the generous co-operation of the United States naval authorities.

From this day forward, until the cessation of hostilities, Canada's eastern coast was continuously patrolled, and all convoys leaving Halifax and Sydney were escorted by seaplanes until well through the danger zone. Meanwhile the construction of barracks, hangars and other station establishment was being hastened as much as possible. The organization of the Royal Canadian Naval Air Service was to embody a comprehensive arm of coastal defence, and was to include the necessary complement of seaplanes, airships and kite balloons. Eighty cadets had been recruited and were under training in England and the United States. Plans were complete for the training of the men, and recruiting was well under way.

With the signing of the armistice orders were received to demobilize. All work was stopped at the bases, all cadets were discharged, and Colonel Cull and his staff, with the exception of one officer, returned to England. The Americans withdrew to the United States, leaving, as a present to the Canadian Government, fourteen flying boats and a large quantity of flying and ground equipment.

At present (April, 1919) the two bases are semi-complete, all work having been stopped when the buildings were in various stages of construction. The men's barracks at both stations were already finished. They are beautiful buildings of their kind, excellently appointed and capable of accommodating comfortably 150 men, each. The main store buildings were also finished and are well stocked with valuable equipment. The seaplane hangars although complete were, however, temporary structures and not suitable for the conditions they will be required to meet. Very little work has been done on the airship and kite balloon buildings.

Thus, though it was deemed necessary, for a time, to reduce the superstructure of this arm of defence, it is rapidly being rebuilt on the foundations that remained. At a time when chains of national and international air service are being planned on a large scale by leading nations, the Canadian links will not be missing.

Nova Scotia especially should have a wonderful future for aerial operations. The east of Cape Breton island is the natural jumping-off station for transatlantic air-routes, being, if we except the island of Newfoundland, closer to Europe than any other point in North America. Nova Scotia is also in easy communication with two main centres, Montreal and New York, by either "over-land" or "over-water" routes.

A glance at the map will show that operations from bases in Nova Scotia would protect the entire eastern coast of Canada, with the exception of the strait of Belle Isle. The establishment and maintenance of such bases at strategic points along the coast would form a most important adjunct to coastal defence and the protection of the termini of transatlantic lines of communication. A scheme of extensive development of this sort would not only serve the end of national protection, but would fit in with the plans now on foot for imperial co-ordination.

Nova Scotia is particularly well suited to operations by hydro-aircraft. Its wonderfully protected harbours and a network of inland lakes provide excellent natural landing places. It was on Great Bras d'Or lake that Graham Bell and Baldwin, years ago, carried on some of the first experiments with the hydroplane.

In time of peace the coastal defence organization could be utilized to a very large extent for various operations throughout the province. Forest protection, survey work, fishery protection, reporting of wrecks and coastal irregularities could be greatly benefited by aerial assistance. Lines of communication for passenger, express and mail carrying could be established between St. John, N.B. and Halifax, Halifax and Sydney, Sydney and Newfoundland, the Magdalen Islands, and Prince Edward Island. Halifax will one day be the terminus for aerial communication with the West Indies—a fact which has a bearing on the present question of their closer association with Canada.

SUMMER VISITORS AND TOURISTS.

That certain places attract foot-loose men and families for their summer outing is positive proof that they are healthy and accessible and either beautiful, interesting or exciting.

Several parts of Nova Scotia meet these needs. Fast steamers from Boston to Yarmouth and the Red Cross Line from New York to Halifax, and through sleeping cars from Boston to Halifax via St. John have brought a growing summer population to dot the sides of the Bras d'Or lakes, the Annapolis and Minas basins and the southern coast.

The first-named, though the farthest away, are the most picturesque. The Bras d'Or lake neighbourhood is in fact an ideal place for a yacht, a motor-boat, and for salt or fresh water fishing. These lakes are in reality long fiords or arms of the sea entered only by narrow channels and forming what are reputed to be among the most beautiful salt water enclosures in the world, memorable incidentally as the nest where the hydroplane was hatched.

As a whole, Cape Breton offers scenery beautiful rather than grand, in the shape of mountains, lakes and streams. Baddeck, reached by steamer from Iona (12 miles), a point on the C.N.R., has long been the chief centre for tourist and sportsman. Whycocomagh, Grand Narrows (where codfish are said to rise to a fly) and historic Louisburg are among many cool beauty spots in an island of still primitive charm, where Gaelic is a second language.

Taking Halifax, Yarmouth and Annapolis Royal as starting points of the south and west coasts, the area is dotted with pleasant summer resorts, and at the back of these are lakes strung together by streams which offer all that the canoeist or fisherman can ask. The most picturesque scenery in this part lies in the much-indented coast line between Pubnico and Yarmouth and in St. Mary's bay where Digby Neck is broken by the Petite Passage. On the Atlantic coast are St. Margaret's bay, Chester, Mahone, Bridgewater, Lunenburg, Lockeport, Liverpool and Shelburne; on the Annapolis Basin Digby and Deep

Brook; and on the Basin of Minas, Grand Pré and Wolfville, all well-known names to visitors from the big eastern cities of the United States, whose summer outlay is a source of profit to the thrifty farmers who supply their needs. The summer climate and the reposeful beauty are a valuable asset to Nova Scotia. Another district proving more and more alluring to the visitors is the broken coast just east of Halifax.

Golf links are to be found at Amherst, Digby, Halifax, Sydney, Truro, and Yarmouth and yachtsmen know the Royal Nova Scotia Yacht Club at Halifax and the Royal Cape Breton at Sydney, and also the yacht builders at Dartmouth, Port Hawkesbury and La Have.

Places of historic interest are the ruins of the fortress of Louisb urg, the grassy ramparts of Fort Edward at Windsor, and Fort Anne on the Annapolis river. Here was the first permanent settlement of Europeans in Canada (1604) and here the first Canadian vessel was built.

SHOOTING AND FISHING.

To those who look for game and fish Nova Scotia offers unusual sport and abundant variety. Thanks to wise government protection of fish, bird and beast the country is now well stocked with moose, caribou, deer, hare, raccoon, geese, ducks, ruffed grouse, wood-cock and snipe, salmon, ouananiche, brook trout, sea trout, sword-fish and tuna.

Moose are to be found in all the counties outside Cape Breton island, but caribou could till October, 1918, be shot only in Cape Breton counties of Inverness and Victoria. Amherst, Caledonia, Halifax, Guysboro, New Glasgow or Truro are all rendezvous within easy reach of moose land, and, as the law allows each hunter to shoot but one, the total bag of 1,300 in a recent season is proof that they are plentiful.

The caribou grounds are reached by a drive from Baddeck to Big Invervale, or by steamer from Sydney to Ingonish.

There are close seasons for all game; the kill of woodcock is limited to ten per day and the pheasant is protected at all times. A license fee is paid by non-residents of from $15 to $30 (big game) and can be obtained at the office of the Chief Game Commissioner at Halifax.

Fish.

Nearly all the large streams in Nova Scotia abound with salmon and trout. Surface salmon fly-fishing begins late in April in rivers like the Tusket, Clyde, Medway, Indian, Musquodoboit, Sheet Harbour and St. Mary's, and continues in the Cheticamp, Margaree, etc., in Cape Breton island, until mid-September. For the Margaree (Inverness), St. Mary's (Guysboro), Musquodoboit (Halifax), Medway (Queens) and Tusket (Yarmouth), fishermen take up quarters at Baddeck, Sherbrooke, Musquodoboit Harbour, Mills Village, and Kemptville, respectively. Liverpool in Queens county is a good starting point for the Mersey river system with its 600 square miles of watershed and which connects Rossignol, Fairy lake and Fisher's lake, and provides a good combination of canoeing and trout fishing with access to the fine game country to the north. Grand Lake in Halifax county is a special place for the gamey land-locked salmon (ouananiche).

Brook trout may be taken from April 1 to September 30. In the southwest counties April, May and September are the best for trout fishing, the absence of cold springs and brooks tending to make the water too warm in July and August

One of the best centres for moose, salmon, sea trout, and brook trout is Sheet Harbour, which is reached by a steamer from Halifax or by a 28-mile drive from Upper Musquodoboit, a point on the Canadian National Railway. Another good centre for bear, moose, deer and trout is Kedgemakoodge or Fairy lake. Here are the headquarters of the Rod and Gun Club, with club house, log cabins and cottages for sportsmen and tourists.

Tuna.

To land a giant leaping tuna with rod and line is no mean feat and done by few, though tried by many. The record fish, weighing 760 pounds, was caught at Great island near Port Medway, Queens county, by the guide L. D. Mitchell. Port Medway is also good for salmon and sword-fish. Tuna fishing is an attraction also at Lockeport and in Cape Breton at Mira bay, St. Ann bay, reached by water from Sydney, and at Arichat.

The Swordfish.

This fish, which may weigh 600 pounds, is harpooned while basking on the surface. When struck by the harpoon the line attached to a buoycask thrown overboard holds him till his dangerous struggles are over. This exciting sport can be had at the interesting old French settlement of Arichat, at Port Medway, at Halifax and St. Peter's bay, where the short canal admits boats into the Lower Bras d'Or lake.

NOTE.—Details as to accommodation, guides, game laws, licenses and localities are all to be found in "Hunting and Fishing," published by the Game Commissioners of Nova Scotia, or in "Out-of-Door in Quebec and the Maritime Provinces," published by the Canadian National Railways.

THE MIGRATORY BIRDS CONVENTION ACT, 1917.

This Act, which runs for at least fifteen years, is designed to preserve insectivorous birds in the interest of agriculture, and wild fowl in the interest of food supply and health-giving sport.

The yearly damage to crops in Canada by the pests which are birds' natural food has been estimated at many million dollars. The great auk, the passenger pigeon, the Eskimo plover and the Labrador duck are already extinct, but the Act may save the whooping crane, the wood duck and other birds nearing extermination.

Summary of the Act.

1. *Birds protected continuously throughout the year:—*

   (*a*) *All migratory insectivorous birds, viz.:*—bobolinks, catbirds, chickadees, cuckoos, flickers, fly-catchers, grosbeaks, humming birds, kinglets, martins, meadowlarks, nighthawk or bull-bats, nut hatches, orioles, robins, shrikes, swallows, swifts, tanagers, titmice, thrushes, vireos, warblers, wax-wings, whippoor-wills, wood-peckers, and wrens and all other perching birds which feed entirely or chiefly on insects.

   (*b*) *All migratory non-game birds, viz:*
   auks, auklets, bitterns, fulmars, gannets, grebes, guillemots, gulls, herons, jaegers, loons, murres, petrels, puffins, shearwaters and terns.

2. *Birds protected continuously throughout the year for ten years:—*

   (*a*) *Shorebirds* or waders:—avocets, curlew, dowitchers, godwits, knots, oyster catchers, phalaropes, plovers, sand pipers, snipe, stilts, surf birds, turnstones, willet, wood cock, and yellow legs. (NOTE.—wood cock, Wilson or Jack snipe may be shot in Nova Scotia from September 1st to December 14th; greater and lesser yellow legs, black breasted and golden plover from August 14th to November 30th).

   (*b*) band tailed pigeons, little brown sandhill and whooping cranes, swans and curlew.

3. *Birds protected continuously throughout the year for five years:—*
   wood duck and eider duck.

4. *Migratory Game birds protected except in an open season:*
   water fowl (brant, wild duck and geese) rails (coots, gallinules, sora and other rails), pigeons (doves and wild pigeons). The open season for these birds in Nova Scotia is from September 15 to December 31.

Except that Indians and Eskimos may at any season take the food (and their skins for clothes) *no eggs or nests of migratory birds may be taken at any time* except under permit from the Commissioner of Dominion Parks, Ottawa, for purposes of science or propagation. Permits may also be issued to kill protected birds if proved to be doing serious injury to agricultural or other interests.

Penalties.

(a) *For violation of Act:* Fine of from $100 to $500 besides costs or three to six months' imprisonment, and confiscation of guns, boats and appliances.

(b) *For interference with game officer* in discharge of his duties, including right of search or for refusal or falsity of information, a fine of from $10 to $100, or imprisonment up to six months, or both.

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ADDRESSES FOR SPECIAL INFORMATION ABOUT NOVA SCOTIA.

Agricultural Societies—
Mr F. L. Fuller, (Superintendent), Halifax, N.S.

Dairying—
Mr. W. A. Mackey (Superintendent), Halifax, N.S.

Farmers' Association.
Mr. C. R. B. Bryan (Secretary), Truro, N.S.

Fruit Farming—
Mr. M. K. Ells, Secretary of the Nova Scotia Fruit Growers Association, Port Williams N.S.

Poultry—
Mr. J. P. Landry, (Superintendent), Truro, N.S.

List of unoccupied and uncultivated lands.—
Natural Resources Intelligence Branch, Ottawa.

"*Improved Farms in Eastern Canada*"—
Canadian Pacific Railway, Montreal, Que.

Industries and Immigration Dept.—
Mr. W. B. MacCoy, (Secretary of the Department), Hollis St., Nova Scotia.

Agent General for Nova Scotia—
57a Pall Mall, London, S.W.

General Passenger Agent for Canadian National Railways, Moncton, N.B.

Trade Inquiries—
Mr. Harrison Watson, Canadian Trade Commissioner, Victoria St., Westminster, England.
Sec. of Board of Trade, Halifax, N.S.
"The Inquiries Branch," of the Department of Trade and Commerce, Ottawa.
Heaton's Annual, 32 Church St., Toronto, Ont.
" Opportunities in Nova Scotia.
" Canada in the Building.

Water Powers—
Secretary of Nova Scotia Water Power Commission, Halifax, N.S.
or Dominion Water Power Branch, Department of the Interior, Ottawa.

Addresses for the use of Returned Soldiers—
1. *Land Settlement Board*, Secretary, Roy Building, Halifax, N.S.
2. *Pensions.* 405 Dennis Building, Halifax, N.S.
3. *Department of Soldiers' Civil Re-establishment*, Spring Garden Road, Halifax, N.S.
4. *Employment Offices* at Amherst, Glace Bay, Halifax, New Glasgow, Sydney, Truro.
5. *Hostel.* Y.M.C.A. Hostel, Barrington Street, Halifax.
6. *Soldier Settlement Board of Canada.* 529 Barrington St., Halifax.

Any inquiry regarding the natural resources of Nova Scotia or other provinces of Canada may be addressed to the

SUPERINTENDENT,
NATURAL RESOURCES INTELLIGENCE BRANCH,
DEPARTMENT OF THE INTERIOR,
OTTAWA.


MAP OF
NOVA SCOTIA
Scale of Miles
PRINCE EDWARD ISLAND
CHARLOTTETOWN
ST. JOHN
BAY OF FUNDY
ATLANTIC OCEAN
HALIFAX
ANNAPOLIS
KING'S
LUNENBURG
SHELBURNE
YARMOUTH
COLCHESTER
PICTOU
ANTIGONISH
GUYSBOROUGH
CUMBERLAND
To London 2,719, Liverpool 2,485, Glasgow 2,407
Genoa 3519, Naples
New York 599, Boston 369 Miles
Yarmouth 162, Portland 328, St. John 262 Miles
Havana 1630, Kingston 1834, Colon 2338 Miles
To Rio de Janeiro 4811 Miles
To Capetown 6423 Miles